

**To Whom It May Concern**

**Dear Sir,**

**LETTER OF INTRODUCTION AND COMPANY PROFILE**

**TYFO FIBRWRAP SYSTEM AND INSITUFORM CIPP TECHNOLOGIES**

We would like to take this opportunity to introduce our services to your esteem organization.

Fibrwrap Construction (M) Sdn Bhd is part of Aegion Corporation, a company with branches offices and licenses throughout the world. We are the licensees for the Tyfo Fibrwrap Systems and Insituform CIPP Technologies from North America.

Briefly, the Tyfo Fibrwrap System, a patented advance composite strengthen system, specifically developed to tailor for the needs of retrofitting, rejuvenating and rehabilitating of buildings, bridges, tunnels and water front structures throughout the world for more than 25 years.

The Insituform CIPP technologies with more than 50 years track record worldwide for trenchless underground infrastructure rehabilitation, provides a jointless, seamless pipe within a pipe - in the corrosion protection of industrial pipe lines and the rehabilitation and strengthening of sewer and water pipes. It renews structural integrity of water, wastewater and industrial pipelines while increases flow capacity, thus significantly reduces long-term maintenance cost with minimum disruption in pipes ranging from 6 to 96 inches in diameter.

Attached is the full depiction of Aegion Corporation giving a brief background of the services available along with product brochures for the abovementioned system and technologies.

Please feel free to contact the undersigned at 012-235 7071 if you like to know more about our system and services.

**Yours faithfully**

**Fibrwrap Construction (M) Sdn Bhd**



**LEONG CHEE SOON**

**General Manager**

## 1. Company Profile

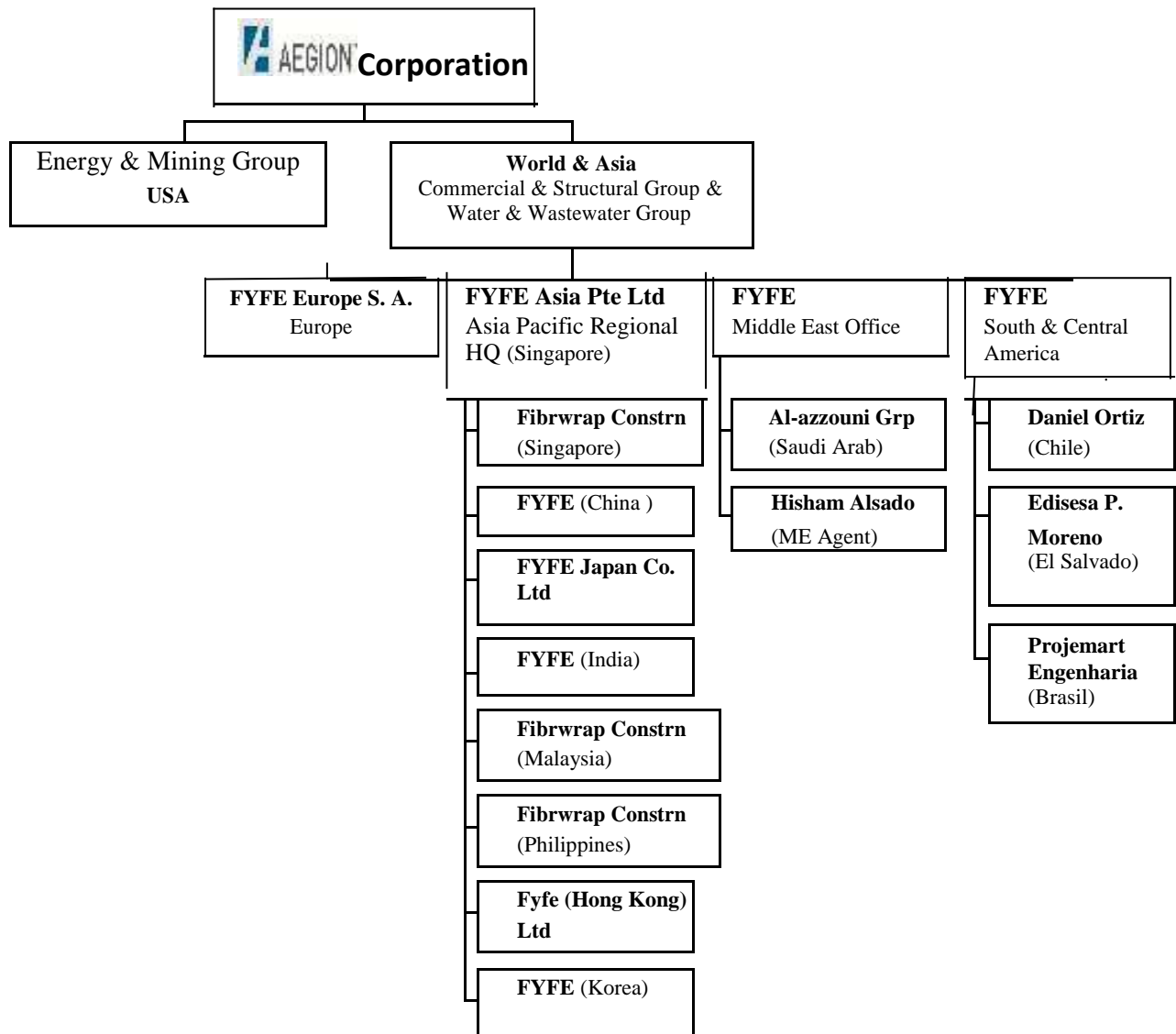
Fibrwrap Construction (M) Sdn. Bhd is a company incorporated in Nov 2003, is one of the several companies under Aegion Corporation a company with branch offices and licensees throughout the world.

The vast experience of its staffs with exposure to various markets in this region put the company in a position to handle challenges, particularly in the field of trenchless technology, structural assessment, repair and strengthening, using the most practical, economical and efficient methods.

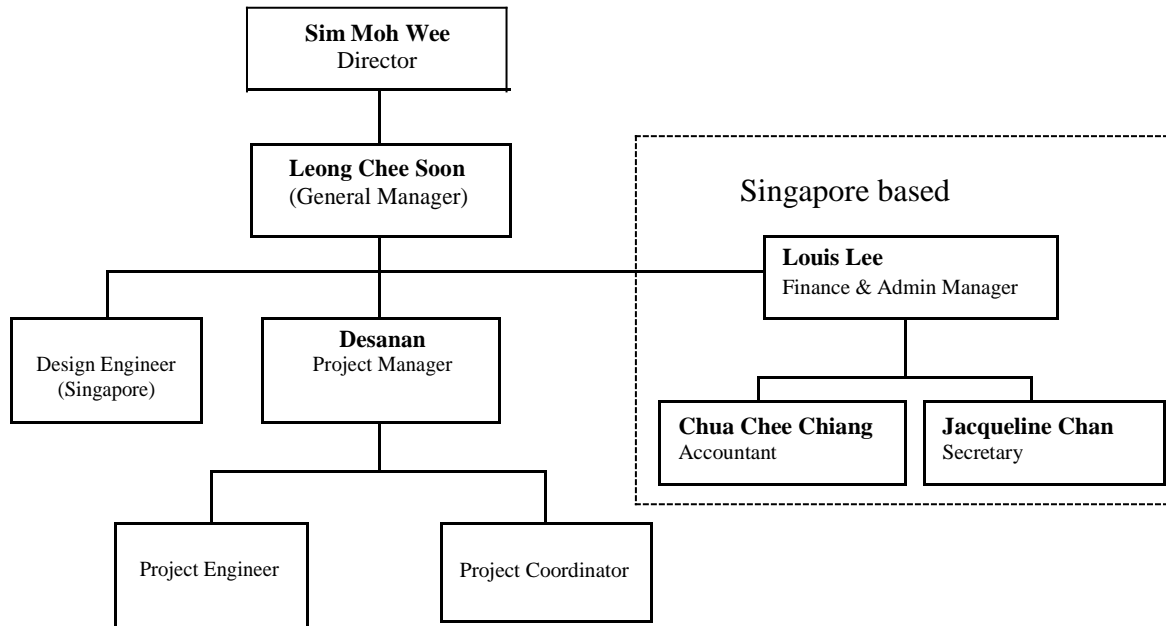
## 2. AEGION Company World Wide

Attached in Appendix A is the AEGION Group of companies & FYFE/Fibrwrap other country address and details.

Fibrwrap and Insituform provides the Infrastructure Solution in AEGION Corporation



### 3. Organisation Chart



### 4. Curriculum Vitae of Key Personnel (Appendix B)

Mr. Sim Moh Wee  
Mr. Leong Chee Soon  
Mr. Desanan

### 5. Project Reference (Appendix C)

#### **Tyfo<sup>®</sup> Fibrwrap<sup>®</sup> System**

China, Hong Kong, Taiwan, India, Vietnam, Thailand, Malaysia, Singapore, Korea, Philippines, Japan, Australia, Sri Lanka and New Zealand

#### **Insituform CIPP Technologies**

Malaysia Project Only

### 6. Certificate of Company Registration (Appendix D)

Company registration

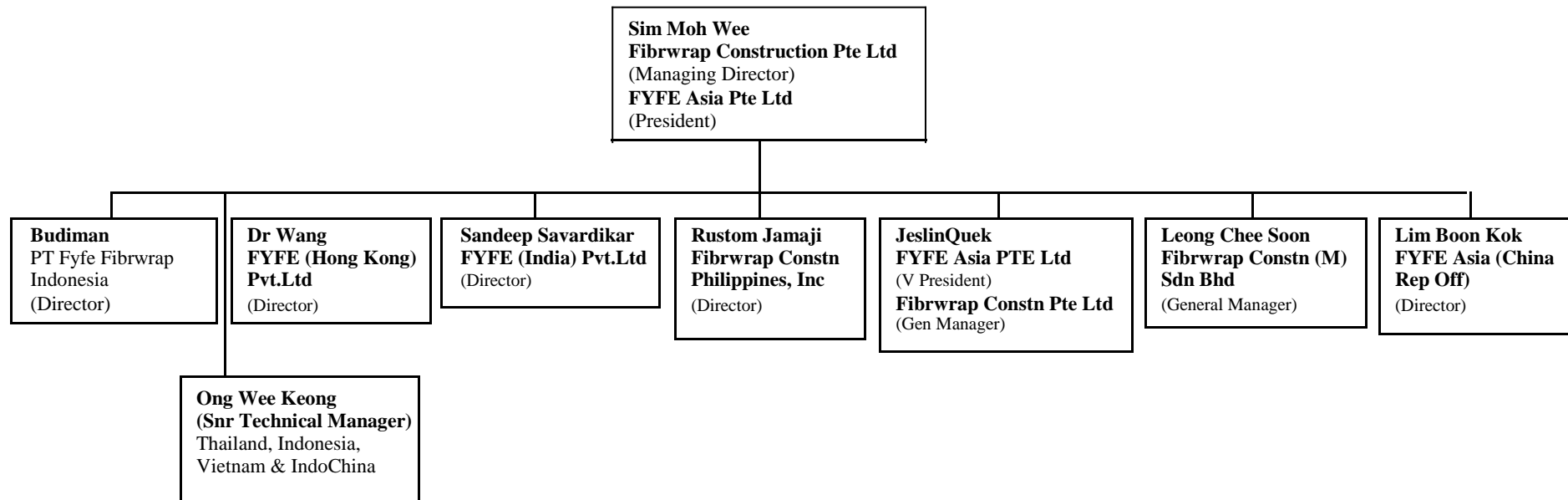
### 7. Company and Product Brochures (Appendix E)

FYFE Co LLC Company and TYFO Fibrwrap Product Brochures  
INSITUFORM CIPP Technologies Brochures

## 8. Corporate Data

<b>Address</b>	<b>Fibrwrap Construction (M) Sdn. Bhd.</b> No 5-4 (3 <sup>rd</sup> Floor) Jalan Kuchai Maju 11 (Jalan 10/116B) Kuchai Entrepreneur's Park Off Jalan Kuchai Lama 58200 Kuala Lumpur, Malaysia Tel: 03.7987.3177 Fax: 03.7987.6177 Email: <a href="mailto:csleong@aegion.com">csleong@aegion.com</a> <b>OR</b> <a href="mailto:csleong@fyfeasia.com">csleong@fyfeasia.com</a> Website: <a href="http://www.fyfeasia.com">www.fyfeasia.com</a>
<b>Board Of Directors</b>	<b>Mr. Sim Moh Wee</b>  <b>Mr. Leong Chee Soon</b>
<b>Company Secretary</b>	<b>Messrs. Chong Lay Kim</b> <i>Corporate Services</i> <i>Tricor Corporate Services Sdn Bhd (Wholly owned subsidiary of Tricor Services (Malaysia) Sdn. Bhd)</i> <i>Member of the Bank of East Asia Group</i> Level 18, The Gardens North Tower Mid Valley City, Lingkaran Syed Putra 59200 Kuala Lumpur, Malaysia.
<b>Authorized Capital</b>	Rm 100,000.00
<b>Paid Up Capital</b>	Rm 100,000.00
<b>Banker</b>	<b>United Overseas Bank (M) Berhad</b> Jalan Wong Ah Fook Branch, Johor Bahru

## Organization Chart (Asia Pacific Region)



## **APPENDIX A**

**FYFE CO.  
LLC (USA)**

Fyfe Company LLC is the manufacturer of the Tyfo<sup>®</sup> Fibrwrap<sup>®</sup> Advanced Composite System. These Fiber Reinforced Polymer (FRP) systems are comprised of carbon, glass and aramid fibers in an epoxy matrix. Tyfo<sup>®</sup> Systems are used for structural strengthening, including seismic retrofit, pipe rehabilitation, blast mitigation and environmental protection.

Fibrwrap Construction (M) Sdn Bhd is the licensee for Insituform CIPP Technologies. The use of Insituform CIPP technologies provides a jointless, seamless pipe within a pipe - in the corrosion protection of industrial pipe lines and the rehabilitation and strengthening of sewer and water pipes

***Europe***

Fyfe Europe S.A.  
28 Aristippou  
Street Glyfada, 166  
74 Athens, Greece  
Phone +30.210.995.9595 fax  
+30.210.9643402 Email:  
[fyfe\\_europe@hol.gr](mailto:fyfe_europe@hol.gr)

***Middle East***

Al-Azzouni Group  
P.O. Box 53035 Jeddah 21583  
Saudi Arabia  
Tel. +966.2.663.2941  
Fax +966.2.665.2851  
Email: [azzounio@hotmail.com](mailto:azzounio@hotmail.com)

Hisham Alsado, PE  
Middle East Agent  
Cell: 202.438.7521  
Email: [hisham@fyfeco.com](mailto:hisham@fyfeco.com)

***South and Central America***

Daniel Ortiz  
TechnoAV S.A.  
Manquehue Sur #520 Of. 216  
Las Condes - Santiago Chile  
Tel/Fax: +562.245.31180  
Email: [tnuevo@entelchile.net](mailto:tnuevo@entelchile.net)

Edisesa Pasaje Moreno #120  
Cor Flor Blanca  
San Salvador, El Salvador  
Tel. +503.22.98.15.53 or  
+503.22.98.15.54  
Fax +503.22.23.72.32  
Cell +503.77.06.11.67  
Email: [edisesa@intercom.com.sv](mailto:edisesa@intercom.com.sv)

Projemart Engenharia  
Rua Ernesto Basilio, 64 - sala 211  
Centro - Nova Friburgo - RJ  
CEP: 28614-070  
Brasil  
Tel. +22.2522.9529  
Fax +22.9836.7321

## **FYFE CONTACT IN ASIA**

### *Singapore*

Fyfe Asia Pte Ltd  
6 Clementi Loop  
#04-00  
Singapore 129814  
Phone: 65.6898.5248  
Fax: 65.6898.5181  
Web: [www.fyfeasia.com](http://www.fyfeasia.com)  
Email: [fyfeasia@singnet.com.sg](mailto:fyfeasia@singnet.com.sg)

**Fibrwrap Construction Pte Ltd**  
6 Clementi Loop  
#04-00  
Singapore 129814  
Phone: +65 6898 5248  
Fax: +65 6898 5181  
E-mail: [fibrwrap@starhub.net.sg](mailto:fibrwrap@starhub.net.sg)

### *Australia*

**FYFE Tyfo (Aust) Pty Ltd**  
Level 1, U24/36 Ralph Street  
Alexandria NSW 2015  
Australia  
Phone: +61 2 1300 142 280  
Fax: +61 2 1300 142 240  
E-mail: [info@fyfetyfo.com.au](mailto:info@fyfetyfo.com.au)  
Web: [www.fyfetyfo.com.au](http://www.fyfetyfo.com.au)

### *Japan*

**FYFE Japan Co., Ltd.**  
the SOHO 1210  
2-7-4 Aoumi, Koutou-ku,  
Tokyo 135-0064  
Japan  
Phone: +81 3 6457 1910  
Mobile: +81 90 2852 7696  
Fax: +81 3 6467 1911  
E-mail: [basem@fyfejapan.com](mailto:basem@fyfejapan.com)

### *Korea*

Fyfe Korea Co. Ltd.  
#428-5, Songnae-dong, Kangdong-gu  
Seoul, 134-030, Korea  
Tel: 82.2478.6026  
Fax: 82.2478.6024  
E-mail: [conclinic@conclinic.co.kr](mailto:conclinic@conclinic.co.kr)  
Website: [www.conclinic.co.kr](http://www.conclinic.co.kr)

### *Thailand*

**Groupmech Corporation Ltd**  
99/101-102, Soi Mamin Condo  
Sihaburanukit Road  
Minburi, Bangkok 10510  
Thailand  
Phone: +66 2 918 8990  
Fax: +66 2 517 7487  
E-mail: [sales@groupmech.com](mailto:sales@groupmech.com)

### *China*

**Fyfe Asia Pte Ltd (China Rep. Office)**  
Huai Hai Zhong Hua Building  
Unit 613  
No. 885 Ren Min Road  
Shanghai 200010  
China  
Mobile: 86-135 6459 9773  
Tel: 86.21.6374.1773  
Fax: 86.21.6374.1779  
E-mail: [limboonkok@fyfeasia.com](mailto:limboonkok@fyfeasia.com)

**Fyfe (China) Pte Ltd**  
Guang Cheng Plaza Unit 301  
No. 26 Gao Sheng Qiao Road  
Chengdu 610041  
China  
Tel: 86.28.8507.1670  
Fax: 86.28.8507.1680



*India*

**Fyfe (India) Pvt. Ltd.**

226 Hammersmith Industrial Estate  
Narayan Pathare Marg  
Mahim (West), Mumbai 400016  
India  
Tel: 91.9820.710.224  
Fax: 91.22.2444.6002  
Email: [fyfeindia@vsnl.net](mailto:fyfeindia@vsnl.net)

*Brunei & East Malaysia*

**FYFE Borneo Sdn Bhd**

Unit 20, 2nd Floor, Block B  
Bangunan Ben Kassim & Hj Zaliha  
Spg 440 Kg Sg Tilog, Jln Muara  
Bandar Seri Begawan BC2115,  
Brunei Darussalam  
Phone: +673 234 1625  
Fax: +673 234 1626;  
E-mail: [fyfeborneo@gmail.com](mailto:fyfeborneo@gmail.com)

*Philippines*

**EC Structural Composites, Inc**

Unit 502-505 Jocfer Building  
Commonwealth Avenue  
Quezon City, Manila  
Philippines  
Phone: +63 2 453 5151  
Fax: +63 2 951 2761  
E-mail: [ECstructural@yahoo.com](mailto:ECstructural@yahoo.com)

*Indonesia*

**PT. FYFE FIBRWRAP Indonesia**

Jl. Pintu Besar, Blok D-36 Ruko Pinangsia  
Lippo Karawaci - Tangerang 15811  
Indonesia  
Phone: +62 21 558 5996 / 7  
Fax: +62 21 558 5897  
E-mail: [fyfeindonesia@yahoo.com](mailto:fyfeindonesia@yahoo.com)

*Malaysia*

**Fibrwrap Construction (M) Sdn. Bhd.**

No 5-4, Jalan 10/116B  
Kuchai Entrepreneur's Park  
Off Jalan Kuchai Lama  
58200 Kuala Lumpur  
Malaysia  
Tel: 03.7987.3177  
Fax: 03.7987.6177  
Mobile: 012.235.7071  
Email: [csleong@aegion.com](mailto:csleong@aegion.com)  
Or [csleong@fyfeasia.com](mailto:csleong@fyfeasia.com)

*Hong Kong*

**FYFE (Hong Kong) Ltd**

Unit 5, 22th Floor  
Metropole Square  
2 On Yiu Street, Shatin  
Hong Kong  
Phone: +852 3579 5588  
Mobile: +852 9787 9128  
Fax: +852 3579 5599  
Email: [jwang@fyfe.com.hk](mailto:jwang@fyfe.com.hk)

## **APPENDIX B**

## Curriculum Vitae

**Sim Moh Wee**

Date of Birth: 17<sup>th</sup> June 1963

Nationality: Malaysian

Qualification: B Eng (Civil), M.Sc (Bldg. Sc.), MBA (Accountancy)

Experience:

- |             |  |
|-------------|--|
| 2002        | Fibrwrap Construction Pte. Ltd. - Managing Director      |
|             | FYFE Asia Pte. Ltd. - President                          |
| 2001        | L&M Structural Composites Pte. Ltd. - General Manager    |
| 1999        | L&M Proceq Technology - Dy. General Manager              |
| 1997        | L&M Concrete Specialists Pte. Ltd. - Dy. General Manager |
| 1995        | L&M Repair Technology Pte. Ltd. - Asst. General Manager  |
| 1989 - 1994 | L&M Repair Technology Pte. Ltd.                          |
| 1987 - 1989 | Sho Bond Construction (S) Pte. Ltd.                      |

Significant Projects include:

1. Repairs and strengthening to Hwa Chong JC.
2. Repairs and strengthening to Shaw Building.
3. Repairs and strengthening to New Park Hotel.
4. Repairs and strengthening to Teresa Ville.
5. Strengthening to Chatsworth Court.
6. Waterproofing to Rendezvous Hotel.
7. Strengthening to Rendezvous Hotel.
8. Crack Repair to CTE Tunnel.
9. Movement joint repairs to CTE Tunnel.
10. External façade repairs to Marina Square.

11. Repairs to toilet leakage at HDB units.
12. Repairs to Hyatt Hotel. **Sim Moh Wee**
13. Strengthening to International Building.
14. Underdeck repairs to Clifford Pier.
15. Underdeck repairs to Collyer Quay.
16. External facade repairs to UIC Building.
17. External facade repairs to Mandarin Hotel.
18. Repairs and strengthening to New Kelani Bridge, Sri Lanka
19. Underdeck repairs to Pantoloan Jetty, Indonesia.
20. Underdeck repairs to Muara Jetty, Brunei.
21. Repairs and strengthening to Bomb Blast Damaged Structure, Ceylinco House, Sri Lanka.
22. Repairs to cracks at Don Muang Tollway, Thailand.
23. External façade repairs to Cathay Trust Building, Thailand.
24. Repairs and strengthening to Phuket Yatch Club, Thailand.
25. Waterproofing to POSB Centre.
26. Waterproofing to Singland Tower.
27. Waterproofing to Orchard Underpass.
28. Underdeck repairs to Jurong Port.
29. Repairs to Berthing Dolphins at SRC.
30. Repairs to Jetty at Pulau Ayer Chawan.
31. Strengthening to Formosa Silo, Taiwan.
32. Strengthening to Chin Swee Carpark.

## Curriculum Vitae

Leong Chee Soon

### QUALIFICATION

- \* B Eng (Civil) The Univ. of Manchester, UK
- \* Adv. Diploma Building Construction Management (Singapore Polytechnic)
- \* Diploma Civil Engineering; Major in Design (Singapore Polytechnic)
- \* Member of Institute of Material Malaysia (MIMM)
- \* Member of Technological Association Malaysia (MTAM)

### EMPLOYMENT:

- 2004 to Present** Fibrwrap Construction (M) Sdn Bhd (General Manager)
- 2002 - 2004** Fibrwrap Construction Pte Ltd (Senior Manager)
- 2001 - 2002** L&M Concrete Specialist Pte Ltd, Structural Composites (Snr Project Manager)
- 1996** GTM Enterpose - Project Manager (on 6months Project Secondment from L&M)
- 1995 - 2001** L&M Prestressing Pte Ltd (Snr Project Coordinator/Project Manager)
- 1991 - 1995** L&M Repair Technology Pte Ltd (Snr Project Coordinator/Project Manager)
- 1988 - 1991** L&M Repair Technology Pte Ltd (Snr Tech. Officer)
- 1983 - 1988** Resources Development Corporation Ltd (Assistance Plant Supervisor)

**EXPERIENCE (over last 30 years)**

**2004 Fibrwrap Construction (M) Sdn Bhd (General Manager) - PRESENT**

An engineering company specializing in structural investigation, structural repairs, strengthening and maintenance of concrete, timber and steel structures.

Responsible for the business and operation of the company in Malaysia including preparation of proposal, tendering, workforce & materials control, finances and oversee the execution & completion.

Major Projects/Type of Structures undertaken or involved included the appraisal and rehabilitation of:-

- R. C. Marine Jetty & Underwater Structures;
- Steel Bridges, R. C. Bridges and Culverts;
- R. C. & Steel Silos, R.C. & Steel Water Tanks;
- Fire Damaged R. C. Structures;
- R. C. Buildings;
- R. C. Retaining Wall;
- Slopes & All types of R.C., Steel & Timber Structures.
- Rail way lines, Precast Via ducts and ballast structure

**Example of strengthening project:**

Strengthening of beam and column at PUDU Plaza Shopping complex

Strengthening of beam and slab for increase in load carrying capacity to Podium slab at Medan Putra Complex at Manjalera, Kepong

Strengthening of beam at PGRM Building for 15 tons MRI scanning machine.

Strengthening of RC Post tension of flat slab for increase in loading capacity to data center for CIMB Bank At Menara SBB

Strengthening of RC beams at Jabatan Bekalan Air - Tg Gemuk, Rompin, Pahang

Strengthening of beams and slabs for Housing Development Project for Johor Land

Corrosion protection to Steel Frame of Machine at Tissue factory in Kluang, Johor

Housing Development in Kluang, Johor - Structural strengthening works

Spalling Concrete Repair, Fibrwrap installation and Corrosion protection of sewer treatment plant for 5star Hotel Johor Bahru

Excella Business Park, Ampang, Kuala Lumpur - Strengthening of floor slab

United Oversea Bank (M) Berhad, Johor Bahru- Strengthening of Floor slab for Bank's Vault room

Abadi Villa – Swimming Pool landscape feature strengthening

Institute Kemahiran Belia Negara, Lanchang Temerloh – Beam strengthening at Surau

Bo Jung Factory, Muar Johor - Beam and slab repair

Slab strengthening for Khoo Soon Lee Realty, Johor Bahru

### **Sri Lanka**

Structural Strengthening of Column at Cinnamon Square, Galle Face Colombo

### **Example of bridge, slopes inspection and assessment works:**

8 bridges and crossing LPNG Brunei

KL Monorails super structures, column, cross head, girders and ancillaries buildings, etc for KLIA Consult

Ampang LRT bridges, rail tracks and building structures, etc for KLIA Consult Ipoh

Memorial Park slope stability for Vertitech

Feedstock Steel silos material testing and recommendation for Vertitech HSBC

Jalan Timbalan, Johor Bahru – slope stability assessment

### **Example of involvement in other projects:**

Quality Alam - Toxic landfill - Senior construction management using geoliner and geofabric for Main Contractor

Subang Gantian new bridge construction works, Shah Alam – Senior Construction management work for Main Contractor

### **2002-2004 Fibrwrap Construction Pte Ltd (Senior Manager)**

An engineering company specializing in structural investigation, structural repairs, strengthening and maintenance of concrete, timber and steel structures. I was responsible for setting up and running the business operation of the company in Singapore including preparation of proposal, tendering, workforce & materials control, budgeting and oversee the execution & completion all works secured.

### **Example of Tunnel inspections, repair, maintenance and assessment works:**

CTE Tunnel Inspection, Repair and Maintenance work for Land Transport Authority (LTA) (S\$4.4M – 6mths) Works involving defect assessment, replacement of electrical cable trays, spalling concrete repair, water leakage repair, coating, traffic control and cathodic protection works

### **Example of assessment and strengthening project:**

Riverhouse at Clarke Quay timber roof beam strengthening

Strengthening of Pier 21 at Jurong Port Road

Singapore Chem-Con column strengthening

Factory at Kian Teck Way strengthening works

Plaza Singapura beam strengthening works

NUS Swimming pool beam and column strengthening

NUS Law Library rectification to damp rising

Changi Meridien Structural Strengthening, A&A works

Blk 52,54, 56 & 58, 64 & 64 at Upper Cross Street beam and slab strengthening

Tiong Bahru Plaza Slab Strengthening to A&A works

Slab Strengthening to DBS Bank Tower 2 Podium Shenton Way, A&A works YMCA – Beams and Slab Strengthening

China Square Parcel G - Beam and Slab Strengthening Works

Composite Wrapping to HDB Void Decks Columns Term Contract 4 and 5

**Leong Chee Soon**

**2001-2002 L&M Concrete Specialist Pte Ltd, Structural Composites (Snr Project Manager)**

Responsible for the general management of the company and projects secured

**Example of assessment and strengthening project:**

Anderson Secondary School Beam and Column Strengthening

Pickering Street Wall Strengthening

King Edward Hall VII at College Road beam and slab strengthening

High Street Center beam strengthening works

Beam Strengthening at Exxon Mobil

Beam Strengthening to NTUC at No. 680, Upp Thomson Road, A&A works

China Square Parcel G - Beam and Slab Strengthening Works

A&A to Rangoon Road - Betting Centre

Composite Wrapping to HDB Void Decks Columns Term Contract

2; Structural strengthening works to Pei Fu building, Industrial Road

**1993-2001 L&M Prestressing Pte Ltd (Snr Project Coordinator/Project Manager)**

Responsible for the management and completion of projects to meet timeline and budget for the company resolving many technical and contractual matters.

**Example of General and Specialist Construction Management works**

Construction of 2nos of Silo for Ssangyong Engineering & Construction Co. Ltd (S\$8.0M – 12mths)

Demolition of Pan United Cement Silo (62m high x 22m dia.) at Pulau Damar Laut (S\$4.0M – 3mths)

Construction and handing over of 2nos of (45m high x 22m dia.) silo, a 4 storey Office building and packing house for Messr Jurong Cement at Pulau Damar Laut.

Handing over of (1no. 60m high x 22m dia. Silo) for Blue Scope Cement silo construction project at Pulau Damar Laut

Re-construction of Stamford Tyres Warehouse, Office and Showroom at Lok Yang (S\$15M – 12mths)

Construction of 3blocks Multi storey building and a Parade Square at Sembawang Camp Redevelopment Phase 2 (S\$20M - 18mths)

Addition and alteration works to 13<sup>th</sup> storey Alexandra Point, for Tigers Development. (S\$1.8M - 16weeks)

Construction and erection of concrete and steel structure for Teflon fabric roof structure for Amphitheatre at Nanyang Polytechnic at Ang Mo Kio

Construction of 2nos of bridges (under tidal condition) crossing over Bedok Canal for Laguna Golf and country Club Development Project (S\$1.8M-6months)

**Sri Lanka**

Structural Repair, freeing of rollers and rockers bearing and Pot Bearing Replacement to New Kelani Bridge at Colombo, Sri Lanka (S\$4.4M)

Repair to Fire Damage Ceylinco Bank at Colombo (S\$1M)



**Leong Chee Soon**

**1988-1992 L&M Repair Technology Pte Ltd (Snr Tech. Officer/Snr Project Coordinator)  
Test Laboratory, Non Destructive Testing and Building Assessment Works**

Setting up of Concrete Test Laboratory Test Procedures and Calibration System for successful Accreditation under Singapore Laboratory Accreditation Scheme.

Laboratory was set up in the Innovation Center of Nanyang Technological University to carry out joint research with the University.

Pioneering the Non Disruptive Testing Methods for Insitu Concrete strength and Data Analysis for Building Assessment Services to Consulting Firms/Engineers for routine and mandatory building inspection after the collapse of Hotel New World in Singapore.

- Manjoseri School Hall Structural assessment, Kaki Bukit, Singapore
- Setron Building, Alexandra, Singapore
- Serangoon Plaza, Serangoon Road, Singapore
- AIWA Factory building, Lower Delta Road, Singapore
- Ngee Ann Polytechnic, Singapore
- Singapore Contractors Association Ltd Building, Alexandra Singapore
- York Hotel Carpark, Singapore
- Sembawang Naval Base, Admiralty Road, Singapore
- NUS Engineering Block - Singapore

**1983-1988 Resources Development Corporation Ltd (Assistance Plant Supervisor)**

**Ready Mixed Concrete (4.5 years)**

Laboratory concrete and material testing

Concrete Trial Mix and Mix Design

Quality Control of concrete mix using QUSUM analysis for all batching plants

Batching Plant Production Operations and Calibration Checks

Civil Works to set up Batching Plants for specific projects

## Curriculum Vitae

**Desanan Krishnan**

**Date of Birth** : 29 Nov 1979

**Nationality** : Malaysian

**Experience** :

2015 – present	Insituform Linings Asia Sdn Bhd/Fibrwrap Construction Sdn Bhd - Senior Project Manager
2013 – 2015	Insituform Linings Asia Sdn Bhd (Project Manager)
2011 – 2013	Mewah Kota Sdn Bhd (Merge Energy Bhd) Senior Project Manager
2010 - 2011	Salcon Engineering Berhad, Project Manager – Mumbai, India NRW Project
2008 – 2010	Jalur Cahaya Sdn Bhd - Assistant Construction Manager
2006 - 2008	Jalur Cahaya Sdn Bhd - Senior Executive – NRW
2005 – 2006	Puncak Niaga (M) Sdn Bhd – NRW Executive
2002 - 2005	Lestari Nilam Sn Bhd. – Engineer
2001	M-Pile Sdn Bhd – Site Engineer

Significant Projects include:

**2013 to present**

1. Project Title: Projek NKEA Greater KL/KV – River of Life Package G07 & 08 Rehabilitation of existing Sewer Pipes network at Federal Territory and Selangor for  
  
Main-Contractor : Pembinaan Daya Tekad Sdn Bhd & Kejuruteraan Cempura Jaya Sdn Bhd  
  
Completed 30 kilometers of sewer rehabilitation with Insituform Cured In-Place Pipe (CIPP), Trenchless Underground Rehabilitation of Pipes Technology  
  
Project Value : **MYR 24 Million & MYR 12 Million**
2. KL International Airport 2 – Sewer Pipe Repair Works using Insituform CIPP Technology  
  
Main-Contractor : Elmibina Sdn Bhd  
  
Project Value : MYR 800K

3. Defect rectification work for Insituform Singapore for Contract C5, C6 and C7 for release of Performance Bond and Certificate of Making Good Defects
4. Defect rectification work for Insituform Singapore for Sewer line Rehabilitation in Labuan, East Malaysia for release of Performance Bond and Certificate of Making Good Defects

**2011 – 2013**

5. The Construction & Completion of Balancing Reservoir, Access Road and Laying of Treated Water Mains For Panching Water Treatment Works, Kuantan, Pahang – Package 2 for East Coast Economic Region Development Council (ECERDC)

PMC : KLCC Projects Sdn Bhd

Consultant HLA Associates Sdn Bhd

6. Water Loss Supply Mitigation Program in Selangor, Wilayah Persekutuan Kuala Lumpur Dan Putrajaya. Replacement of old Water Pipes Program 2011/2012

(i) P5A – Ulu Bernam & Kg. Sg. Choh

(ii) P7A- Parit Mahang

(iii) P5B- Batu Arang

(iv) Establishment of Pipe Main Zones

(v) Advance Pressure Management System- 20 selected KTAK DMZ's

Client : Syarikat Bekalan Air Selangor Sdn Bhd (SYABAS)

Consultant Ghazali Associates Sdn Bhd & Senie Associates Sdn Bhd

**2010 – 2011**

7. Work of Leak Detection & Water Flow Analysis in 8 Identified Zones in Mumbai. Client : Municipal Corporation of Greater Mumbai (MCGM)

**2008 – 2010**

**Desanan Krishnan**

8. Non Revenue Water (NRW) Control and Reduction Phase 3 Contract period of 76 months in 5 districts – Petaling, Klang, Hulu Langat, Sepang & Kuala Langat to achieve total leakage savings of 300 MLD comprising of 2 stages:-  
Stage I - Establishment of 560 new DMZ during the first of 2.5 years. Stage II - Management, improvement and maintenance of established DMZ

Client : Syarikat Bekalan Air Selangor (SYABAS)

9. All works technically involved to set up one DMA's, PMZ (Pressure Management Zone) and Leakage analysis

**2002 – 2005**

10. Pipe Maintenance Works in 3 Districts – Petaling, Sepang and Kajang.– PUAS ( SYABAS )
11. Project Engineer For Project PUAS BHD
12. Project Value : 37.6 Million - Replacing All AC Pipes to MS / DI Pipes around Gombak / Hulu Selangor
13. Ductile Iron Pipes laying and testing in Sabak Bernam
14. Laying of New HDPE Pipes in Kg. Merbau Indah , Sg. Buloh and Kg. Sg. Buaya, Banting, Selangor.
15. Specialist in HOT –Tapping (Under Pressure Tapping-Tee-Off) method – Klang Valley, Malacca, Johor, Negeri Sembilan, Terengganu, Pahang & Perak.
16. Pipe Laying and Infrastructure Works (Drainage)
17. Maintenance Works Involving Reservoir

## **APPENDIX C**



**AEGION**

Stronger. Safer. Infrastructure.



**FIBRWRAP**

**INSITUFORM CIPP**

**Project Reference - Malaysia**

No	Project Title	Main-Contractor	Client	PMC or Consultant	Type of Work	Length	Completion
1	Project NKEA Greater KL/KV (River of Life) Pakej G07- Kerja-Kerja Pemuliharaan Rangkaian Paip Pembetungan Awam Sedia Ada Di Wilayah Persekutuan Dan Selangor	Pembinaan Daya Tekad Sdn Bhd	Jabatan Perkhidmatan Dan Pembetungan (JPP)	Indah Water Konsortium (IWK)	1. CIPP 2. CCTV 3. Cleaning 4. Tophat 5. Obstruction Clearance	21 KM	Sept, 2014 Completed Earlier than Scheduled
2	Project NKEA Greater KL/KV (River of Life) Pakej G08- Kerja-Kerja Pemuliharaan Rangkaian Paip Pembetungan Awam Sedia Ada Di Wilayah Persekutuan Dan Selangor	Kejuruteraan Cempera Jaya Sdn Bhd	Jabatan Perkhidmatan Dan Pembetungan (JPP)	Indah Water Konsortium (IWK)	1. CIPP 2. CCTV 3. Cleaning 4. Tophat 5. Obstruction Clearance	9 KM	Feb, 2014 Completed Earlier than Scheduled
3	KLIA 2 Project - Sewer Pipe Repair Works	Elmlibina Sdn Bhd	Malaysian Airports Holdings Bhd (MAHB)	Indah Water Konsortium (IWK)	1. CIPP 2. CCTV 3. Cleaning 4. Obstruction Clearance.	1.2 KM	Dec, 2013 Completed Earlier than Scheduled
4	Kajang 2 - Development Project	Visi Nusajaya Sdn Bhd	Indah Water Konsortium (IWK)		1. CIPP 2. CCTV 3. Cleaning 4. Obstruction Clearance.	500m	Dec, 2013

**List of installations for the TYFO<sup>®</sup> FIBRWRAP<sup>®</sup> Systems (Malaysia)**

<b>Project</b>	<b>Country</b>	<b>Consultant</b>	<b>Type of Application</b>	<b>Installat'n</b>
Kelana Parkview Condominium, Kuala Lumpur	Malaysia	Veritech Appraisal (M) Sdn. Bhd.	Beams strengthened for shear and flexure due to increased loading	Jun-97
Shell LPG Installation, Bintulu, Sarawak	Malaysia	Budi Waja Technologies	Repair to damaged columns for sub station	Mar-98
Plaza Olympia, Kuala Lumpur	Malaysia	Hewlett Packard Sdn Bhd	Strengthening of hollow core slabs with Tyfo UC laminates	May-02
Khoo Soon Lee Realty	Malaysia	BK Yeoh	Slab strengthening	Mar-04
Bo Jung Factory	Malaysia	Mega Greenview	Beams and slabs leakage repair.	Jun-04
Institute Kemahiran Belia Negara	Malaysia	RY Engineering Consultants	Beam strengthening	Aug-04
Codominium at Taman Desa, Kuala Lumpur	Malaysia	Abadi Man Nien	Landscape feature strengthening	Sep-04
Bank Building - Jln Wong Ah Fook, Johor Bahru	Malaysia	Jurutera Perunding Cepak	Slab and beam strengthening due to added loading	Jun-05
Ampang Business Park, Kuala Lumpur	Malaysia	GEA	Structural assessment, slab strengthening and crack repair	Jun-05
Condominium at Taman Desa	Malaysia	Abadi Man Nien	Repair to roof waterproofing	Oct-05
Five Star Hotel, Johor Bahru	Malaysia	BK Yeoh	Spalling concrete repair and corrosion protection to sewer treatment plant	Dec-05
Wawasan Perumahan (Johor) Sdn Bhd	Malaysia	BK Yeoh	Slab strengthening	Jan-06
Sabah Forestry Industries	Malaysia	Vertitech (M) Sdn Bhd	Slab strengthening	Feb-06
Sabah Port Ferry Jetty	Malaysia	Vertitech (M) Sdn Bhd	Repair and corrosion protection to jetty piles	Feb-06
Lares Engineering	Malaysia	-	Strengthening of party wall of building, Petaling Jaya	Mar-06
Factory in Kluang, Johor Bahru	Malaysia	-	Corrosion of protection to steel frame of machine	Apr-06
Johor Land Berhad, Housing Scheme in Johor Bahru	Malaysia	BK Yeoh	Beams and slabs strengthening	May-06
Water Tank Construction Project, Kuala Rompin, Pahang	Malaysia	BW Perunding	Strengthening of elevated water tank beams	Jun-06
Heritage building assessment, Penang	Malaysia	RYO Sdn Bhd	Building Delapidation survey	Jun-06
Show House AT Johor Bahru	Malaysia	Johor Land Berhad	Beam and Slab Strengthening	Sep-06
PGRM - Cheras, KL	Malaysia	Jurutera Perunding Alphareka	Beam Strengthening	Oct-06
Perlis Sub-Station - Kawasan Perindustrian Jejawi, Perlis	Malaysia	Lares Engineering Sdn Bhd	Beam strengthening	Nov-06
Mutiara Hotel Johor Bahru	Malaysia	Mutiara Hotel JB	Steel Props to beams	Nov-06
Kota Belud Jetty - Sabah	Malaysia	Vertitech (M) Sdn Bhd	Timber piles strengthening	Dec-06
Inspection Work to TM2 Machine	Malaysia	Kimberly-Clark Products (M) Sdn. Bhd.	Corrosion Mitigation Inspection	8/Sep/07
MARITIME Centre, Putrajaya	Malaysia	P.J. Indah Sdn Bhd	Strengthening of RC Beam at Opening for M&E Services	15/Oct/07
ZEN Park	Malaysia	JPS Consulting Engineers Sdn Bhd	Beam (1B-4) Strengthening Works	17/Dec/07
Vertitech Sabah	Malaysia	Vertitech (Sabah) Sdn.Bhd	Material Supply & Consultancy	2/Feb/08
RHB Bank, Kulim	Malaysia	Vertitech (M) Sdn.Bhd	Material Supply & Consultancy	28/Feb/08
IBM Tower TTDI	Malaysia	Seaway Renovation Sdn Bhd	Slab Strengthening	27/Mar/08
Jln Gasing Drive, PJ	Malaysia	Just Events Sdn Bhd	Design & PE Endorsement	16/Apr/08

Section 13, PJ	Malaysia	KSD Consulting Engineers	Consultation Services	15/May/08
UMW Toyota Showroom	Malaysia	Vertitech (M) Sdn.Bhd	Settlement & Crack Monitoring	30/Jun/08
tang Berjuntai	Malaysia	Vertitech (M) Sdn.Bhd	Building Assessment & Consultancy	18/Jul/08
AIK HUA Building	Malaysia	Vertitech (M) Sdn.Bhd	Design Checking , Inspection & Erection Supervision	30/Aug/08
Ampang LRT & KL Monorail	Malaysia	Vertitech (M) Sdn.Bhd	Structural Assessment & Condition Monitoring	10/Sep/08
SIRIM Berhad	Malaysia	Vertitech (M) Sdn.Bhd	Condition Assessment Works & Consultancy Services	1/Dec/08
Kolej Yayasan UEM	Malaysia	Vertitech (M) Sdn.Bhd	Settlement Monitoring & Consultancy Services	1/Dec/08
KL Monorail line	Malaysia	Vertitech (M) Sdn.Bhd	Structural Coating Works	7/Jan/09
Unit No.5, USJ Subang Jaya	Malaysia	Sime Darby Property Berhad	Structural Strengthening Works	12/Jan/09
HSBC Johore Branch (Bukit Timbalan)	Malaysia	BK Yeoh	PE Inspection, Survey & Consultancy Services	31/Mar/09
Wisma MBSB, Damansara Height	Malaysia	Vertitech (M) Sdn.Bhd	Material Supply & Consultancy Services for Strengthening of Slab & Beam	21/Apr/09
PDRM, Shah Alam	Malaysia	Prima ACE Sdn Bhd	Strengthening of Beam	1/Jul/09
Phase 5, Tmn Sri Telok Emas, Melaka	Malaysia	HT SOO	Structural Repair of Sewerage Treatment Plant (STP)	22/Jul/09
HSBC Johore Branch (Bukit Timbalan)	Malaysia	BK Yeoh	To Construct a Rubble Pitching Wall to Repair Slope Failure	1/Aug/09
HSBC Johore Branch (Taman Molek)	Malaysia	BK Yeoh	PE Inspection, Survey & Consultancy Services	1/Sep/09
The Store Malaysia	Malaysia	HT SOO	PE Inspection, Survey & Consultancy Services	15/Sep/09
Babagon Dam, Penampang, Sabah	Malaysia	Vertitech (M) Sdn.Bhd	Repair & Protection to Spillway Concrete Surface	1/Oct/09
Wentel Building, Larkin, Johore	Malaysia	BK Yeoh	Repair & Fibrwrap Strengthening to External Parapet Wall	15/Oct/09
Agro Bank	Malaysia	Vertitech (M) Sdn.Bhd	Material Supply & Consultancy Services for Strengthening of Roof Beam	15/Dec/09
PERKIM Building, Jalan Ipoh, KL	Malaysia	HT SOO	Structural Assessment & Consultancy Services Works	1/Mar/10
PERKIM Building, Jalan Ipoh, KL	Malaysia	HT SOO	Design Construction of Wall Strengthening	1/Mar/10
HSBC Johore Branch (Taman Molek)	Malaysia	BK Yeoh	Structural Strengthening & Consultancy Services Works	5/Apr/10
CIMB Bank, Menara SBB Plaza Damansara	Malaysia	EDP Consulting Group Sdn Bhd	Structural Strengthening & Consultancy Services Works	13/Apr/10
The Store Malaysia HQ, Petaling Jaya	Malaysia	HT SOO	Structural Assessment, Concrete Repair & Strengthening Works	25/May/10
SMK Perempuan, Likas, Kota Kinabalu, Sabah	Malaysia	Vertitech (M) Sdn.Bhd	Material Supply & Consultancy Services	30/Jun/10
Paradise Memorial Park, Tanjung Rambutan	Malaysia	Vertitech (M) Sdn.Bhd	Condition Assessment Works & Consultancy Services	15/Jul/10
HSBC Melaka Branch	Malaysia	BK Yeoh	PE Inspection, Survey & Consultancy Services	26/Jul/10
Desa Cargill Sdn Bhd, Kota Kinabalu, Sabah	Malaysia	Vertitech (M) Sdn.Bhd	Condition Assessment Works & Consultancy Services	13/Aug/10
SMK Perempuan, Likas, Kota Kinabalu, Sabah	Malaysia	Vertitech (M) Sdn.Bhd	Material Supply & Consultancy Services	13/Aug/10
HSBC Johore Branch (Taman Nusa Bestari)	Malaysia	BK Yeoh	PE Inspection, Survey & Consultancy Services	16/Aug/10



Menara LYL Petaling Jaya.	Malaysia	Scope International (M) Sdn Bhd	Strengthening Works	3/Sep/10
Excella Business Park Ampang, Kuala Lumpur	Malaysia	BK Yeoh	PE Inspection, Survey & Consultancy Services	23/Sep/10
Excella Business Park Ampang, Kuala Lumpur	Malaysia	BK Yeoh	PE Inspection, Survey & Consultancy Services	23/Sep/10
KINSABINA Kota Kinabalu, Sabah	Malaysia	Vertitech (M) Sdn.Bhd	Material Supply & Consultancy Services	22/Oct/10
The Store Malaysia Office Warehouse, PJ	Malaysia	HT SOO	Structural Assessment, Concrete Repair & Strengthening Works	13/Jan/11
The Store Malaysia Office Warehouse, PJ	Malaysia	HT SOO	Strengthening Works	28/Jan/11
Cargill Feed Sdn Bhd, Prai, Penang	Malaysia	Vertitech (M) Sdn.Bhd	Condition Assessment Works & Consultancy Services	15/Mar/11
Jing Long Shan Wan Fo Shih, Tokong Budha, Rwg	Malaysia		Project Management Services	1/Apr/11
Bank Negara, Jln Dato Onn, KL.	Malaysia	WT Combine Builders Sdn Bhd	Material Supply & PE Endorsement	4/Apr/11
Angkasa Impian 2 Condominium, KL	Malaysia	Angkasa Impian 2	Improvement of Surface Drainage of Tennis Court	29/Jun/11
Universiti Malaya, KL	Malaysia	Materials Testing Laboratory Sdn Bhd	Consultancy Services for Vibration Monitoring	1/Jul/11
Kenanga Wholesale City Pudu, KL	Malaysia	Binastra Construction (M) Sdn Bhd	Strengthening Works	26/Aug/11
Nokia Siemens KL Central	Malaysia	Seaway Renovation Sdn Bhd	Strengthening Works	12/Oct/11
Bangsar Shopping Centre, KL	Malaysia	BRDB Property Holdings Sdn Bhd	Strengthening Works	2/Nov/11
Viva Hotel, KL	Malaysia	Binastra Construction (M) Sdn Bhd	Strengthening Works	23/Nov/11
Bandar Baru Bangi	Malaysia	WT Combine Builders Sdn Bhd	Engineering Design Input - Rectification of Pad Footing	16/Jan/12
Viva Hotel, KL	Malaysia	Binastra Construction (M) Sdn Bhd	Strengthening of Structural Wall Opening	3/Feb/12
Plaza Medan Putra, KL	Malaysia	Perunding Rekamaju	Strengthening Works to Existing Reinforced Concrete Structures	8/Feb/12
Taman Melawati, KL	Malaysia	SGS (M) Sdn Bhd	Inspection and Infra Structure Laboratory Testing Services	6/Mar/12
MITC, Melaka	Malaysia	HT SOO	Strengthening of Columns in Zine A	16/Mar/12
Bangsar Shopping Centre, KL	Malaysia	BRDB Property Holdings Sdn Bhd	Strengthening Works	16/Apr/12
Muzium, Melaka	Malaysia	Pacific Food Products Sdn Bhd	Strengthening and Repair Works	2/May/12
The Store Malaysia Pudu Plaza, KL	Malaysia	HT SOO	Strengthening System to Beams and Slab	19/Jun/12
Bangsar Shopping Centre, KL	Malaysia	BRDB Property Holdings Sdn Bhd	Strengthening Works	4/Jul/12
Alliance Bank Building Bangsar, KL.	Malaysia	WT Combine Builders Sdn Bhd	Material Supply	9/Jul/12
Housing Project, Kajang	Malaysia	WT Combine Builders Sdn Bhd	Material Supply & PE Endorsement	2/Aug/12
Uptown 5, PJ	Malaysia	Materials Testing Laboratory Sdn Bhd	Consultancy Services for Vibration Monitoring	13/Oct/12
Eco Park, Setia Alam, Shah Alam	Malaysia	WT Combine Builders Sdn Bhd	Material Supply & PE Endorsement	13/Oct/12
Lot 918, 923 & 926 Kampung Cempaka	Malaysia	HT SOO	Method Statement, Building Survey and Delapidation Report Services	31/Jan/13
RHB Bank, Butterworth	Malaysia	HT SOO	Structural Assessment & PE Endorsement	21/Feb/13

RHB Bank, Klang	Malaysia	HT SOO	Structural Loading Diagnosis, Strengthening Work & PE Endorsement	23/Feb/13
RHB Bank, Teluk Intan	Malaysia	HT SOO	Consultancy Services for Vibration Monitoring	1/Mar/13
Jalan Lintas, KK	Malaysia	FYFE Borneo Sdn Bhd	Structural Strengthening	19/Mar/13
No. 25, Jalan Yap Kwan Seng	Malaysia	HT SOO	Strengthening of beams	26/Mar/13
Pusat Bandar Damansara	Malaysia	HT SOO	Strengthening Works	2/Apr/13
RHB Bank, Bagan Serai Branch	Malaysia	HT SOO	Structural Sthrengthen and Structure Loading Assessment	8/May/13
Reezna Engineering Sdn Bhd	Malaysia	HT SOO	RB211 Air Intake Chamber	3/Jun/13
Condominium Angkasa Impian	Malaysia	HT SOO	Carry Out A Visual and Stuctural Inspection	4/Jul/13
Pusat Bandar Damansara	Malaysia	HT SOO	Strengthening of Existing Pre-Stressed Slab Opening Work	18/Jul/13
Housing Project, Jalan Mustapha, JB	Malaysia	HT SOO	Consultancy Services	18/Jul/13
Bangi Phase 1 Project	Malaysia	WT Combine Builders Sdn Bhd	Material Supply	30/Jul/13
RHB Bank, Jalan Tun Razak Branch	Malaysia	HT SOO	Structural Inspection for Signage Structure	24/Sep/13
Sime Darby Medical Centre	Malaysia	WT Combine Builders S/B	Material Supply	30/Sep/13
Avenue 7, Bangsar South Kuala Lumpur	Malaysia	HT SOO	Strengthening Works	11/Oct/13
Rawang Food Industrial Park, Selangor	Malaysia	HT SOO	Strengthening Works	6/Nov/13
Wisma Gamuda, Kota Kemuning	Malaysia	HT SOO	Strengthening Works to Transfer Beam	11/Nov/13
RHB Bank, Tun H S Lee	Malaysia	HT SOO	PE Consultancy for Visual Inspection	20/Nov/13
Excella Business Park Ampang, Kuala Lumpur	Malaysia	Excella Business Park	Rectification Works	25/Nov/13
Kinrara Golf Resort Chalet	Malaysia	VST Cemerlang Sdn Bhd	Strengthening of Beams & Slabs	26/Nov/13
Bintang Mega Mall, MIRI	Malaysia	FYFE Borneo Sdn Bhd	Strengthening of Beams	20/Nov/13
Besut Setiu Agropolitan, Terengganu	Malaysia	Pembinaan SPK Sdn Bhd	Rectification Works - Waterproofing work to elevated RC watertank	4/Dec/13
Condominium Tanjung Bungah, Pulau Pinang	Malaysia	HT SOO	Strengthening of Beams	30/Dec/13
Bintang Mega Mall, MIRI	Malaysia	FYFE Borneo Sdn Bhd	Supply of Management of Site Work	2/Jan/14
Paragon Residence, Johor Bahru	Malaysia	HT SOO	Strengthening of Columns	16/Jan/14
HSBC Bank North Tower Kuala Lumpur	Malaysia	SGS (M) Sdn Bhd	Consultancy Services for Vibration Monitoring to Slab	3/Mar/14
Worker Training Institute, Cyberjaya	Malaysia	HT SOO	Strengthening Works	3/Mar/14
Twin Galaxy Building, Johor Bahru	Malaysia	HT SOO	Strengthening Works	24/Mar/14
Preciso Plastic Manufacturing - Penang	Malaysia	HT SOO	Professional Engineering Service	16/Apr/14
Lakeville Condominium Taman Wahyu	Malaysia	HT SOO	Strengthening Works	11/Apr/14
Carpark - Kemayan Square	Malaysia	HT SOO	Strengthening of Slab	15/Apr/14
MCT Tower, USJ	Malaysia	HT SOO	Strengthening of Beam	20/May/14
Tong Tor Development, Johor	Malaysia	HT SOO	Enlargement Beam	23/May/14
DBKL, Pasar Raja Bot (Chowkit)	Malaysia	Perwira Al-Shura Consulting	Rectification Works	23/Jun/14
OCBC Bank Lebu Pantai P. Pinang	Malaysia	HT SOO	Professional Engineering Service	10/Jul/14

Kayangan Depot Shah Alam, Selangor	Malaysia	YNY Consulting	Inspection Services	21/Jul/14
Offshore Works, Seligi Platform for Enquest	Malaysia	Kencana HL Sdn Bhd	Rectification Works	19/Aug/14
OCBC Bank Lebuah Pantai P. Pinang	Malaysia	HT SOO	Rectification Works	19/Aug/14
UTAR, Sg. Long	Malaysia	HT SOO	Strengthening of Transfer Beam for Shear	21/Aug/14
Twin Galaxy Building, Johor Bahru	Malaysia	HT SOO	Rectification Works	29/Oct/14
Maju Junction Plaza, KL	Malaysia	YNY Consulting	Professional Engineering Service	4/Nov/14
Seligi Platform	Malaysia	Sapura Kencana HL Sdn Bhd	Repair works	26/Jan/15
Bayan Baru, Penang	Malaysia	Frontier Structure Sdn Bhd	Concrete Crack Repair & Structural	21/Apr/15
Seligi Platform	Malaysia	Sapura Kencana HL Sdn Bhd	Strengthening to slab repair works	8/May/15
Structural Strenghening Works - Twin Galaxy, JB	Malaysia	LAL Engineering (M) Sdn Bhd	Structural strengthening works to column	23/May/15
Twin Galaxy, JB	Malaysia	LAL Engineering (M) Sdn Bhd	Strengthening column works	11/Jun/15
Twin Galaxy, JB	Malaysia	LAL Engineering (M) Sdn Bhd	Load Test	22/Jun/15
PE Services - MPAJ	Malaysia	Excella Business Park	PE inspection & assessment for DBKL	23/Jul/15
Seligi Platform	Malaysia	Sapura Kencana HL Sdn Bhd	Repair works	29/Jul/15
Seligi Platform	Malaysia	Sapura Kencana HL Sdn Bhd	Repair works	8/Sep/15
Vista Hill, Taiping	Malaysia	Tung Siew Yong Tractor Sdn Bhd	Strengthening works to beams using jacketing method	5/Sep/15
Medini, JB	Malaysia	Santarli Sdn Bhd	Strengthening works to beams	9/Sep/15
Texas, Melaka	Malaysia	INSTITUT OF FORM CIPP - Texas Instruments	Sewer Pipe Rehabilitation Works	14/Sep/15
MDIS, JB	Malaysia	EMI Uptrend Builders Sdn Bhd	Structural strengthening works to beams	17/Sep/15
SMK Tmn Scientex	Malaysia	Synergy Goldtree Sdn Bhd	Strengthening of precast Beams	16/Oct/15
Mt. Erskine, Penang	Malaysia	VST Builders Sdn Bhd	Strengthening works to columns	16/Nov/15
EOS Plant, Teluk panglima Garang	Malaysia	Emeryoleo Specialties (M) Sdn Bhd	Plinth Refurbishment Work	19/Nov/15
Hotel at Ipoh, Perak	Malaysia	Strong Force (M) Sdn Bhd	Repair and Strengthening of column & beams	17/Dec/15
Bangunan Herbarium at Taman Tasik Perdana KL	Malaysia	Usaha Perkasa Dagangan Sdn Bhd	Strengthening works to slab & beam - DBKL	17/Dec/15
Seligi Platform	Malaysia	Sapura Kencana HL Sdn Bhd	Repair works	4/Jan/16
Batu Berendam Melaka	Malaysia	Texas Instruments Sdn Bhd	Survey insepctions & recommendation for remedial to structural defects	8/Jan/16
Sentul Carpark	Malaysia	Strong Force (M) Sdn Bhd	Strengthening of structural slab	18/Jan/16
Bukit Raja Klang	Malaysia	INSTITUT OF FORM CIPP - Visi Nusajaya Sdn Bhd	Sewer Pipe Rehabilitation Works	25/Feb/16
Iconic Hotel Pulau Pinang	Malaysia	Lucky 888 Sdn Bhd	Strengthening of structural column	7/Mar/16
Telok Panglima Garang	Malaysia	Emeryoleo Specialties (M) Sdn Bhd	Plinth Refurbishment Work	4/Mar/16
Bukit Rimau Shah Alam	Malaysia	Matahari Club House	Condition survey inspection and recommendation for remedial to walls	11/Mar/16

**List of Installations for the TYFO® FIBRWRAP® Systems (Singapore)**

<u>Project</u>	<u>Country</u>	<u>Consultant</u>	<u>Type of Application</u>	<u>Installation</u>
Loyang Villas	Singapore	DE Consultants	Beam strengthening for shear and flexure	Jun-95
Chinese High School	Singapore	DE Consultants	Clock-tower wall strengthening against lateral wind loads	May-96
Tanjong Ria Condominium	Singapore	KTP Consultants	Beam and slab strengthening for shear and flexure	Jul-96
Tien Wah Press Factory	Singapore	DE Consultants	Beam and slab strengthening for shear and flexure	Jul-96
Tangling Regency Condominium	Singapore	DE Consultants	Beam and slab strengthening for shear and flexure	May-97
NTU Innovations Centre	Singapore	INDECO Consultants	Beam strengthening for shear and flexure due to removal of column	Jun-97
Hotel Rendezvous	Singapore	Tan Ee Ping and Partners	Beam, slab and column strengthening for axial, shear and flexure due to change of use. Brick wall strengthening for durability	Jun-97
NTU Lecture Theatre	Singapore	INDECO Consultants	Beam strengthening for shear and flexure due to increased loading	Dec-97
Lady Hill Hotel	Singapore	RSP Consultants	Slab strengthening for flexure due to low concrete grade	Dec-97
Avitech Centre	Singapore	E.J. Chan and Associates	Beam strengthening for shear and flexure	Jul-98
TT Distribution Centre	Singapore	BR Case Consultants	Beam strengthening for shear and flexure	Jul-98
Pearl's Hill Police HQ	Singapore	Kinhill Consultants	Slab and beam strengthening due to low concrete grade	Aug-98
King's Centre	Singapore	Steen Consultants	Strengthening of roof slab and beam due to change of design	Sep-98
King's Centre	Singapore	Steen Consultants	Beam and slab strengthening due to soil topping added	Dec-98
International Building	Singapore	Steen Consultants	Beam and column strengthening for flexure, shear and axial loads due to low concrete grade	Mar-99
China Square Development	Singapore	RSP Consultants	Beam and column strengthening due to soil settlement	Jun-99
Pan Pacific Hotel Basement Carpark	Singapore	EJ Chan Consulting Engineers	Beam strengthening due to increased dead & live loads	Jul-99
AeroLinks Logistic Warehouse	Singapore	M-Tech Consultants	Beam strengthening due to additional slab over void	Jul-99
Commercial Development at Robertson Quay	Singapore	Steen Consultants	Beam strengthening for flexure and shear	Aug-99
MayBank Building	Singapore	T.Y. Lin (SEA)	Column strengthening to increase in-situ strength to satisfy specification	Feb-00
Peninsular Hotel	Singapore	D.E. Consultants	Beam strengthening due to increase of load.	Apr-00
DSTA – Infocom Building at Science Park	Singapore	LBW Consultants	Slab strengthening due to cracking	May-00

Nee Soon Camp	Singapore	RSP Consultants	Beam slab & column strengthening	May-00
Changi Naval Base, Singapore	Singapore	ST Engineering	Strengthening to concrete spun piles underwater for axial and shear enhancement	Aug-00
Selerang Camp Multi Purpose Hall	Singapore	-	Slab strengthening	Oct-00
Ang Mo Kio MRT Station	Singapore	EJ Consultants	Beam strengthening	Oct-00
Cement Silo at Jurong Port	Singapore	Tan EE Ping	Strengthening of silo for controlled demolition	Oct-00
Hougang Emporium	Singapore	DE Consultants	Beam strengthening	Nov-00
Residence at Lor Telok Kurau	Singapore	DE Consultants	Beam and column strengthening	Nov-00
Raffels Hospital at Blanco Court	Singapore	Tan EE Ping	Beam, slab and column strengthening	Nov-00
Northland Primary School	Singapore	Engineers 9000	Column enhancement	Feb-01
International Business Park 2	Singapore	T.Y. Lin (SEA)	Slab strengthening	Mar-01
College of Medicine Building, Singapore General Hospital	Singapore	Murray-North	Strengthening to deteriorated beam	Apr-01
Zion Bible-Presbyterian Church	Singapore	T.Y. Lin (SEA)	Beam strengthening	Apr-01
Singapore Management University	Singapore	T.Y. Lin (SEA)	Column and slab strengthening	May-01
Sengkang LRT	Singapore	ST Engineers	Wall strengthening at 12 LRT stations	Jun-01
Society for the Physically Disabled	Singapore	RSP Consultants	Column and beam strengthening	Jul-01
Zhong Hua Primary School	Singapore	Montgomery Watson	Column strengthening	Aug-01
Khatib Camp	Singapore	RSP Consultants	Beam and slab strengthening	Aug-01
United World College	Singapore	RSP Consultants	Wall strengthening	Aug-01
Geylang Chinese Methodist Church	Singapore	EJ Consultants	Beam strengthening	Oct-01
Block FBA1 and FBA2 at NUS	Singapore	PWD Consultants	Beam strengthening	Oct-01
Nee Soon Camp (Blk 13, 13A)	Singapore	BR Case Consultants	Structural strengthening	Jan-02
Ren Ci Hospital	Singapore	RSP Consultants	Beam strengthening	Jan-02
Rangoon Road Blk 677 (Betting Centre)	Singapore	DE Consultants	Structural strengthening	Feb-02
Blk 512 NTUC at Bishan St. 13	Singapore	Chan Chee Wah Consultants	Beam strengthening	Feb-02
Geylang Methodist Church	Singapore	EJ Consultants	Beam strengthening	Feb-02
China Square , RSP Parcel G	Singapore	RSP Consultants	Beam and slab strengthening	May-02
Yuhua Primary School	Singapore	Tan Ee Ping Consultants	Column strengthening	Jun-02
Orchard Rd/Fort Canning Rd for YMCA	Singapore	CS Consulting	Beam and slab strengthening	Jul-02
Woodlands Secondary School	Singapore	CPG Consultants	Slab strengthening	Jul-02
NTUC No. 680 Upper Thomson Road	Singapore	LBW Consultants	Beam strengthening	Aug-02
Majestic Theatre	Singapore	RSP Consultants	Slab strengthening	Aug-02
Exxon Mobil	Singapore	Jurong Consultants	Beam strengthening	Sep-02
10A Galistan Avenue	Singapore	-	Bomanite concrete imprint and colour staining to existing driveway and apron	Oct-02
Northland Secondary School	Singapore	CPG Consultant	Beam strengthening	Oct-02

DBS Bank	Singapore	Beca Carter Hollings & Ferner	Slab strengthening	Nov-02
Harbour Front Interchange Station - WTC	Singapore	Wan Soon Engineering	Underpinning works	Nov-02
Punggol Primary School	Singapore	Fong Consultant	Column and beam strengthening	Dec-02
Lorong Limau	Singapore	DE Consultants	Column strengthening	Dec-02
Waffles Slab at NUS	Singapore	CPG Consultants	Slab strengthening	Jan-03
1 Jupiter Road	Singapore	BK Consulting Engineers	Column strengthening	Jan-03
Blk 149 Sarum Road, Changi Airbase	Singapore	DSTA	Column strengthening	Feb-03
Tiong Bahru Plaza Shopping Mall	Singapore	RSP Consultants	Slab strengthening	Mar-03
Changi General Hospital (Multi Purpose Hall)	Singapore	CPG Consultants	Column strengthening	Mar-03
DTSS Tanah Merah	Singapore	Wan Soon Engineering	Grouting to Sandy Soil at Shaft Chamber	Apr-03
Blk 52, 54, 56 & 58 and Blk 62 & 64 at Upper Cross Street	Singapore	WTS Consulting Engineers	Beam and slab strengthening	Apr-03
Harbour Front Interchange Station - WTC	Singapore	Wan Soon Construction	Grouting and honeycomb repair	Apr-03
Singapore Changi Airport - Terminal 1	Singapore	Trans Equatorial Engineering	Prepacked grouting	Apr-03
DTSS Tanah Merah	Singapore	Wan Soon Engineering	Grouting to vertical shaft wall	Apr-03
Changi Meridien	Singapore	KTP Consultants	Column strengthening	May-03
Kranji Camp	Singapore	T.Y.Lin (SEA)	Column strengthening	May-03
Ngee Ann Polytechnic	Singapore	NPS Construction & Management	Water Leakage Repair	May-03
46 & 47 Mosque Street	Singapore	T P Seow Consultants	Beam and slab strengthening	May-03
CTE Tunnel Structure	Singapore	Land Transport Authority	Concrete repair	May-03
NUS Law Library	Singapore	CPG Consultants	Rectification to moisture problem	May-03
Westwood Condominium	Singapore	WTS Consulting Engineers	Beam strengthening	May-03
NUS Swimming Pool	Singapore	ECAS-EJ Consultants	Beam and column strengthening	May-03
21 Tanjong Pagar Road	Singapore	CKY Engineering Consultants	Beam, slab and column strengthening	Jun-03
The Trumps Condominium	Singapore	Meinhardt (Singapore)	Column strengthening	Jun-03
JTC Factory at 1200 Depot Road	Singapore	SMM	Column strengthening	Jul-03
Changi East - Phase III	Singapore	STAE	Repair to precast concrete beam of jetty wharves structure	Jul-03
Plaza Singapura	Singapore	T.Y.Lin (SEA)	Beam strengthening	Aug-03
Factory at Kian Teck Way	Singapore	Jurong Consultants	Beam and slab strengthening	Aug-03
Bartley Secondary School & Bedok View Secondary School	Singapore	CPG Consultants	Beam and column strengthening	Aug-03
Xin Min Secondary School	Singapore	CPG Consultants	Beam and slab strengthening	Sep-03
Ngee Ann Alumni Clubhouse	Singapore	Cericorn Consultants	Beam strengthening	Sep-03
High Street Centre	Singapore	ECAS-EJ Consultants	Beam strengthening	Sep-03
Singapore Chem-Con Pte Ltd	Singapore	MABA Engineering Consultant	Column strengthening	Oct-03
DTSS Tanah Merah	Singapore	Wan Soon Engineering	PU grouting leakage shaft wall	Nov-03
The Trumps Condominium	Singapore	Meinhardt (Singapore)	Filling of voids into metal door frame of CD shelter	Nov-03

Jurong Port	Singapore	Jurong Consultants	Port Wharves Piles strengthening	Nov-03
CHIJ Toa Payoh	Singapore	Babtie Asia	Beam, slab and column strengthening	Dec-03
Ang Mo Kio Avenue 5, Tech 2	Singapore	Jurong Consultants	Beam and column strengthening	Dec-03
Singapore Baptist Church	Singapore	-	Leakage repair	Dec-03
DTSS Tanah Merah	Singapore	Wan Soon Engineering	Drilling and gel grouting	Dec-03
Blk 107 Ang Mo Kio Avenue 4	Singapore	BK Consulting Engineers	Beam and slab strengthening	Dec-03
Harbour Front Interchange Station - WTC	Singapore	Wan Soon Engineering	Coring to existing tunnel	Jan-04
Harbour Front Interchange Station - WTC	Singapore	Wan Soon Engineering	Grouting to base slab	Jan-04
Jin Xing Warehouse	Singapore	T S Lee Consultant	Slab strengthening	Jan-04
Guangyang Secondary School	Singapore	CPG Consultants	Beam, slab and column strengthening	Jan-04
Wafer Fab at Ang Mo Kio	Singapore	SCE Consultants	Beam and slab strengthening	Feb-04
Shophouses at Balestier Road	Singapore	Fibrwrap Construction	Beam and slab strengthening	Feb-04
Changi Water Reclamation Plant	Singapore	CPG Consultants	Beam strengthening	Feb-04
King Edward Hall VII at College Road	Singapore	BK Consulting Engineers	Beam and slab strengthening	Feb-04
Pickering Road	Singapore	PEC Consultant	Wall strengthening	Mar-04
63 Lorong 4 Geylang	Singapore	S.H. Ng Consultants	Beam, slab and column strengthening	Mar-04
Church Of Ascension	Singapore	Maunsell Consultants	Beam, slab and column strengthening	Mar-04
Tampines Industrial 39 Gilstead Road	Singapore	Jurong Consultants	Slab strengthening	Apr-04
	Singapore	BK Consulting Engineers	Beam strengthening	Apr-04
Blk 360C Sembawang	Singapore	CPG Consultants	Wall strengthening	Apr-04
No. 22 Steven Close	Singapore	GY Chow Consulting Engineers	Beam strengthening	Apr-04
Pier 21 @ Jurong Port Road	Singapore	SMM	Pier strengthening	May-04
Orchard Fountain Park	Singapore	WEB Structures	Beam strengthening	May-04
Riverhouse at Clarke Quay	Singapore	RSP Consultants	Beam strengthening (Timber structure)	May-04
Bukit Panjang Plaza	Singapore	SCE Consultants	Beam strengthening	May-04
China Square Substation Parcel G	Singapore	PEC Consultant	Wall strengthening	May-04
Marina Centre	Singapore	Meinhardt (Singapore)	Beam and column strengthening	May-04
288 Kenya Crescent	Singapore	BK Consulting Engineers	RC flat roof strengthening	Jun-04
Singapore American School	Singapore	RSP Consultants	Beam strengthening	Jun-04
Changi East - Phase III	Singapore	STAE	Repair of trencher of pier structure	Jun-04
NUS Lecture Theatre 9	Singapore	CPG Consultants	Slab strengthening	Jun-04
ADM Cocoa Pte Ltd at 342 Jalan Boon Lay	Singapore	Fong Consultant	Beam and slab repair	Jun-04
Blk 209 Upper Changi Road - Giant Hypermarket	Singapore	PK Project Consultants	Beam strengthening	Jul-04
Toa Payoh	Singapore	JPL Consultants	Beam strengthening	Jul-04
Clarke Quay (Block D)	Singapore	RSP Consultants	Beam strengthening	Jul-04
Kallang Place	Singapore	CE Engineering	Column/Pier strengthening	Jul-04
NTU Chinese Heritage Centre	Singapore	CPG Consultants	Structural strengthening	Jul-04
Singapore Management University City Campus	Singapore	Maunsell Consultants	Column strengthening	Jul-04
412 to 416 Serangoon Road	Singapore	Watt Engineering Consultants	Beam and column strengthening	Jul-04
40 Jalan Kakatua	Singapore	BK Consulting Engineers	Beam strengthening	Aug-04

Singapore General Hospital (Clock Tower)	Singapore	Ronnie & Koh Partnership	Beam and slab strengthening	Aug-04
Draycott Clubhouse at 4 Draycott Park	Singapore	RSP Consultants	Column strengthening	Aug-04
Singapore Turf Club @ Bukit Timah	Singapore	DE Consultants	Beam, slab and column strengthening	Aug-04
42 Jalan Jarak	Singapore	BK Consulting Engineers	Slab repair	Aug-04
74 Binjai Park	Singapore	Maunsell Consultants	Slab strengthening	Sep-04
Century Square	Singapore	Ronnie & Koh Partnership	Beam and slab strengthening	Sep-04
Bedok View Secondary School	Singapore	CPG Consultants	Slab strengthening and water barriers	Sep-04
No. 1 to 8 Hastings Road	Singapore	SMS Consulting Engineers	Slab strengthening	Sep-04
Khatib Camp	Singapore	SM1 Consulting	Beam and slab strengthening	Oct-04
3 Taman Sireh	Singapore	BK Consulting Engineers	Column strengthening	Oct-04
No.35 Jalan Lengkok Sembawang	Singapore	CS Consulting Engineers	Beam strengthening	Oct-04
9 Sennett Place	Singapore	EI Idea Point	Beam repair	Oct-04
114A Desker Road	Singapore	-	Beam repair	Oct-04
Katong Plaza	Singapore	LBS Engineering Consultants	Beam strengthening	Nov-04
NUS Link Bridge	Singapore	CPG Consultants	Beam strengthening	Nov-04
Ang Mo Kio Tech Place II	Singapore	Ronnie & Koh Partnership	Column strengthening	Nov-04
25 Oriole Crescent	Singapore	Alpha 21 Consultants	Structural investigation	Nov-04
Upgrading of Bridges at 8 locations (LTA RD 107)	Singapore	Lee & Lee Consultants	Bridge strengthening	Nov-04
Upgrading of Bridges at 11 locations (LTA RD 111)	Singapore	Parsons Brinckerhoff	Bridge strengthening	Nov-04
Boon Lay Primary School	Singapore	CPG Consultants	Beam, slab and column strengthening	Nov-04
Anderson Secondary School	Singapore	CPG Consultants	Beam and column strengthening	Dec-04
101 Kallang Way 3	Singapore	Jurong Consultants	Beam and column repair	Dec-04
Macdonald House	Singapore	Parsons Brinckerhoff	Column strengthening	Dec-04
56 Chulin Road	Singapore	Lim Kim Cheong Consultants	Beam strengthening	Dec-04
Changi Prison	Singapore	CPG Consultants	Corrosion protection	Dec-04
30 Jalan Layang Layang	Singapore	BK Consulting Engineers	Beam strengthening	Jan-05
48 Kismis Avenue	Singapore	WTS Consulting Engineers	Beam strengthening	Jan-05
Glentrees Condominium at Mount Sinai Lane	Singapore	MKPL Architects	Repair to culvert drain	Jan-05
Pasir Laba Camp	Singapore	Meinhardt (Singapore)	Column strengthening	Feb-05
Former Ford Factory	Singapore	CPG Consultants	Slab strengthening	Feb-05
Ping Yi Secondary School	Singapore	CPG Consultants	Beam strengthening	Feb-05
Widening of KJE from BKE to PIE (LTA ER104)	Singapore	Parsons Brinckerhoff	Bridge strengthening	Mar-05
Blk 126, #02-08 CNB	Singapore	-	Roof crack repair	Mar-05
Singapore Management University	Singapore	Maunsell Consultants	Beam and slab strengthening	Mar-05
Punggol East Contract 31	Singapore	Surbana Consultants	Strength enhancement of columns	Mar-05
Blk 32 New Market Road	Singapore	Surbana Consultants	Strength enhancement of beams	Mar-05
Goodwood Park Hotel	Singapore	RSP Consultants	Column and beam strengthening	Apr-05
Funan Centre	Singapore	RSP Consultants	Beam strengthening	Apr-05
NUS Central Library	Singapore	CPG Consultants	Beam and slab strengthening	Apr-05



Contract JPPL/EPMT/03/2005 - J13 to J19	Singapore	Jurong Consultants	Underdeck repair	Apr-05
54 Queens Road	Singapore	RN & Associates	Beam and column strengthening	May-05
ST Microelectronics AMK 6E	Singapore	SCE Consultants	Slab strengthening	May-05
Novena Medical Centre	Singapore	KTP Consultants	Column strengthening	May-05
Upgrading of Bridges at 7 locations (LTA RD 113)	Singapore	Beca Carter Hollings & Ferner	Bridge strengthening	May-05
Tien Hock Kheng Temple	Singapore	Milleniums Consultants	Beam strengthening (Timber structure)	May-05
Pinnacle at Duxton	Singapore	Surbana Consultants	Strength enhancement of columns	May-05
Building Improvement to Void Deck (Contract 6)	Singapore	Surbana Consultants	Strength enhancement of columns	May-05
22 Handy Road	Singapore	CS Consulting Engineers	Beam, slab and column strengthening	Jun-05
Clarke Quay (Block C)	Singapore	RSP Consultants	Beam and column strengthening	Jun-05
Sengkang Neighbourhood 2 Contract 35	Singapore	Surbana Consultants	Strength enhancement of columns	Jun-05
Blk 218 Ang Mo Kio Avenue 1-Refuse Area	Singapore	Surbana Consultants	Strength enhancement of beams and slabs	Jul-05
Seletar Camp	Singapore	BK Consulting Engineers	Spalling concrete repair	Jul-05
Popular Bookstore at Bras Basah Complex	Singapore	Ronnie & Koh Partnership	Beam, slab and column strengthening	Jul-05
Bukit Panjang Plaza	Singapore	SCE Consultants	Beam strengthening	Aug-05
Blk 177 Toa Payoh Central #01-124 & 126	Singapore	HS Engineering Consultants	Beam and column strengthening	Aug-05
Factory at Copytron Building, Eunost Avenue 8A	Singapore	BK Consulting Engineers	RC slab strengthening	Aug-05
Hougang Mall	Singapore	Ronnie & Koh Partnership	Beam and slab strengthening	Sep-05
Sports Complex & development at Jurong West Street 93	Singapore	Parsons Brinckerhoff	Beam strengthening	Sep-05
Woodlands Industrial Park E8	Singapore	JPL Consultants	Wall strengthening	Sep-05
Ford Showroom at 305 Alexandra Road	Singapore	ARUP Singapore	Beam strengthening	Sep-05
#01-18/19 White Sand Shopping Centre	Singapore	Ronnie & Koh Partnership	Slab strengthening	Sep-05
55 Market Street	Singapore	WEB Structures	Column strengthening	Sep-05
HSBC at Holland Village Branch	Singapore	Parsons Brinckerhoff	Structural strengthening	Sep-05
Raffles City Shopping Centre at North Bridge Road	Singapore	Parsons Brinckerhoff	Beam strengthening	Sep-05
Funan The IT Mall	Singapore	RSP Consultants	Slab strengthening	Sep-05
Level 1 & 2 of Helios, Biopolis	Singapore	CPG Consultants	Beam and slab strengthening	Sep-05
Sengkang Neighbourhood 2 Contract 34	Singapore	Surbana Consultants	Strength enhancement of columns	Sep-05
Sengkang Neighbourhood 2 Contract 36	Singapore	Surbana Consultants	Strength enhancement of columns	Sep-05
Bras Basah Complex at Blk 231 Bain Street	Singapore	Ronnie & Koh Partnership	Column strengthening	Oct-05
Innova Junior College	Singapore	CPG Consultants	Column strengthening	Oct-05
Goodwood Park Hotel (New Foyer)	Singapore	CS Consulting Engineers	Column and beam strengthening	Oct-05
Blk 240 Bukit Panjang Ring Road	Singapore	GCE Consultants	Beam strengthening	Nov-05
Mandarin Hotel	Singapore	WTS Consulting Engineers	Beam strengthening	Dec-05

Funan Digital Mall	Singapore	RSP Consultants	Beam strengthening	Dec-05
Baggage Room 130	Singapore	Goodwood Park Hotel	Water leakage repair	Dec-05
Singapore General Hospital	Singapore	TP Seow Consultants	Beam and slab strengthening	Dec-05
Li Teck Chuan Cin Tong at No. 8 Lorong 102 Changi Road	Singapore	Building Engineering Consultants	Column and beam strengthening	Dec-05
Boutique Hotel at Tiong Bahru	Singapore	Beca Carter Hollings & Ferner	Beam, slab and column strengthening	Dec-05
2-storey Warehouse at 62 Loyang Way	Singapore	CE Consultants	Column strengthening	Jan-06
Republic Polytechnic at Woodlands Avenue 9	Singapore	Meinhardt (Singapore)	Beam strengthening	Jan-06
International Building	Singapore	SA&P Associates Consulting Civil & Structural Engineers	Beam strengthening	Jan-06
Meraprimo Condo Housing Development	Singapore	DE Consultants	Column strengthening	Feb-06
Keppel Distripark	Singapore	Ang & Ong Consultants	I-Beam strutting	Feb-06
NUS at Bukit Timah Campus	Singapore	T.Y.LIN International	Beam and slab strengthening	Feb-06
HDB Flat at Pasir Ris	Singapore	Housing and Development Board	Façade strengthening	Mar-06
Seraya Avenue	Singapore	Foster Asia Pacific	Tank base coating	Mar-06
NUS - Inter Molecular Cell Biology	Singapore	CPG Consultants	Beam strengthening	Mar-06
Yishun Secondary School	Singapore	CPG Consultants	Column and beam strengthening	Mar-06
Goldenshoe Carpark Building	Singapore	Tham & Wong	Beam strengthening	Mar-06
Sengkang Neighbourhood 4 Contract 14	Singapore	Surbana Consultants	Strength enhancement of columns	Mar-06
Sengkang Neighbourhood 2 Contract 23	Singapore	Surbana Consultants	Strength enhancement of columns	Apr-06
Sengkang Neighbourhood 4 Contract 15	Singapore	Surbana Consultants	Strength enhancement of columns	Apr-06
No. 5 Jalan Sejarah	Singapore	WTS Consulting Engineers	Beam strengthening	Apr-06
Upgrading of Bridges at 12 locations (LTA RD 138)	Singapore	Beca Carter Hollings & Ferner	Bridge strengthening	Apr-06
Upgrading of Bridges at 10 locations (LTA RD 145)	Singapore	PB Merz & Mclellan	Bridge strengthening	Apr-06
NUS 170 - Package 21- Existing Block & AHU Room	Singapore	CPG Consultants	Beam, slab and column strengthening	Apr-06
No. 3 Toh Tuck Place	Singapore	Fibrwrap Construction	Slab strengthening	Apr-06
No. 21 Jalan Sukachita	Singapore	BK Consulting Engineers	Column strengthening	May-06
Whitesands Shopping Centre	Singapore	Ronnie & Koh Partnership	Beam and slab strengthening	May-06
9C Jalan Anggerik	Singapore	Fibrwrap Construction	Slab strengthening	May-06
Biopolis - Chromas Basement 2 Carpark	Singapore	Jurong Consultants	Beam strengthening	May-06
Biopolis Phase 2 - Biomedical Grove	Singapore	Jurong Consultants	Beam and slab strengthening	May-06
Raffles Institution	Singapore	CPG Consultants	Beam strengthening	Jun-06
Clarke Quay - Block B	Singapore	RSP Consultants	Beam strengthening	Jun-06
32 Mayflower Place	Singapore	DE Consultants	Beam and slab strengthening	Jun-06
Residential Building at Lorong 16 Geylang	Singapore	KP Chai Engineering & Management Consultants	Beam strengthening	Jun-06
Upgrading Works at Changi	Singapore	T P Seow Consultants	Brick column strengthening	Jun-06
Paya Lebar MRT Station	Singapore	CPG Consultants	Beam strengthening	Jul-06
Swiss Club School	Singapore	AHL Engineering	Brick pier strengthening	Jul-06

The Central @ Eu Tong Sen Street/Tew Chew Street	Singapore	KTP Consultants	Beam and slab strengthening	Jul-06
Freightlinks Express Distripark	Singapore	Ronnie & Koh Partnership	Façade strengthening	Jul-06
Tanglin Club @ Stevens Road	Singapore	RSP Consultants	Column strengthening	Jul-06
Singapore Aviation Academy	Singapore	CPG Consultants	Structural strengthening	Aug-06
Singapore Changi Airport - Terminal 3	Singapore	CPG Consultants	Beam and Slab Strengthening	Sep-06
Singapore Tennis Centre	Singapore	Fong Consult	Beam Strengthening	Sep-06
Temasek Tower Phase II	Singapore	RSP Consultants	Beam Strengthening	Sep-06

### **List of installations for the TYFO® FIBRWRAP® Systems (Singapore - HDB Projects)**

<b>Project</b>	<b>Country</b>	<b>Consultant</b>	<b>Type of Application</b>	<b>Installation</b>
HDB Block 929, Tampines	Singapore	Housing and Development Board	Columns upgraded for increase of axial capacity	Jul-98
HDB Block 212, Hougang	Singapore	Housing and Development Board	Strength enhancement of columns	Aug-98
Chin Swee Road	Singapore	Housing and Development Board	Columns, beams and slabs strengthened for axial, and flexure due to increase of loading	Dec-98
Building Improvement to Void Deck (Contract 1)	Singapore	Housing and Development Board	Strength enhancement of columns	Sep-99
HDB Term Contract-2 for column upgrading (12 mths)	Singapore	Housing and Development Board	Strength enhancement of columns	Aug-00
HDB Upgrading at Pin Ann Gardens	Singapore	Housing and Development Board	Strength enhancement of columns	Aug-00
HDB upgrading at Telok Blangah Crescent	Singapore	Housing and Development Board	Strength enhancement of columns	Oct-00
HDB upgrading at Ang Mo Kio Ave 3	Singapore	Housing and Development Board	Strength enhancement of columns	Dec-00
HDB Telok Blangah (MUP13)	Singapore	Housing and Development Board	Strength enhancement of columns	May-01
HDB Bedok (MUP 13)	Singapore	Housing and Development Board	Strength enhancement of columns	Jun-01
Queen's Close (MUP)	Singapore	Housing and Development Board	Strength enhancement of columns	Jul-01
Building Improvement to Void Deck (Contract 2)	Singapore	Housing and Development Board	Strength enhancement of columns	Aug-01
Tanjong Rhu (MUP)	Singapore	Housing and Development Board	Strength enhancement of columns	Sep-01
Building Improvement to Void Deck (Contract 3)	Singapore	Housing and Development Board	Strength enhancement of columns	Nov-01
Indus Road (MUP 14)	Singapore	Housing and Development Board	Strength enhancement of columns	Jan-02
Building Improvement to Void Deck (Contract 4)	Singapore	Housing and Development Board	Strength enhancement of columns	Mar-02
Kallang Basin (MUP 14)	Singapore	Housing and Development Board	Strength enhancement of columns	Jun-02
Telok Blangah Crescent (MUP 16)	Singapore	Housing and Development Board	Strength enhancement of columns	Jun-02
Toa Payoh North Precinct and Toa Payoh Central Precinct (MUP 15)	Singapore	Housing and Development Board	Strength enhancement of columns	Jun-02
Brickworks Precinct (MUP 15)	Singapore	Housing and Development Board	Strength enhancement of columns	Jun-02
Building Works at Sembawang N4C9	Singapore	Housing and Development Board	Strength enhancement of columns	Jul-02

Rental Flat Upgrading	Singapore	Housing Development Board	Strength enhancement of columns	Jul-02
Upgrading at Commonwealth Drive (MUP 16)	Singapore	Housing and Development Board	Strength enhancement of columns	Aug-02
Ang Mo Kio Tech 1 #02-06A	Singapore	Housing and Development Board	Strength enhancement of beams and columns	Aug-02
Upgrading of Blk 12 to 20 Marine Terrace Precinct (MUP 14)	Singapore	Housing and Development Board	Strength enhancement of columns	Aug-02
HDB MUP project at Blk 111 to 118 Fengshan Precinct (MUP 16)	Singapore	Housing and Development Board	Strength enhancement of columns	Aug-02
Marine Crescent (MUP 16)	Singapore	Housing and Development Board	Strength enhancement of columns	Sep-02
Building Improvement to Void Deck (Contract 5)	Singapore	Housing and Development Board	Strength enhancement of columns	Oct-02
Upgrading to Blk 7,8 & 13 to 18 Ghim Moh Road (MUP 15)	Singapore	Housing and Development Board	Strength enhancement of columns	Oct-02
Holland Park View (MUP 17)	Singapore	Housing and Development Board	Strength enhancement of columns	Dec-02
Holland Park View (MUP 17)	Singapore	Housing and Development Board	Strength enhancement of columns	Dec-02
Sims Drive & Sims Place (MUP 16)	Singapore	Housing and Development Board	Strength enhancement of columns	Jan-03
Blk 113 & 114 Depot Villa Precinct (MUP 17)	Singapore	Housing and Development Board	Strength enhancement of columns	Feb-03
Blk 1 to 5 Dover Road & Blk 12 to 14 Dover Close East (MUP 17)	Singapore	Housing and Development Board	Strength enhancement of columns	Feb-03
Blk 48 & 48A Dorset Road (MUP 17)	Singapore	Housing and Development Board	Strength enhancement of columns	Mar-03
Upgrading of Blk 12 to 20 Marine Terrace Precinct (MUP 14) - Balance of Work	Singapore	Housing and Development Board	Strength enhancement of columns	Aug-03
Commonwealth Drive (MUP 16)	Singapore	Housing and Development Board	Strength enhancement of columns	Nov-03

#### **List of installations for the TYFO® FIBRWRAP® Systems (India)**

<b>Project</b>	<b>Country</b>	<b>Consultant</b>	<b>Type of Application</b>	<b>Installation</b>
Shah House, Worli, Mumbai	India	Mahimtura Consultants	Structural Strengthening of Circular Columns & Flat Slab	Aug-99
Sudharkar Building, Mumbai	India	Mahimtura Consultants	Slab strengthening	Sep-99
MTNL City T.E. Bldg Fountain, Mumbai	India	MTNL, Mumbai	Strengthening & Corrosion protection to reinforced concrete members.	Jan-00
IOCL Oil Terminal, Korrukupet, Chennai	India	Indian Oil Corp. Ltd, Chennai	Corrosion Protection to Steel Pipeline	Jan-00
MTNL Fountain T.E. Bldg. Fountain, Mumbai	India	MTNL, Mumbai	Structural Strengthening & Protection of Columns, Beams and Slabs	Feb-00
Voltas Sagar Bldg, Parel, Mumbai	India	Mahimtura Consultants	Structural Strengthening of Peripheral Columns due to Increased Loads	Feb-00
MTNL Fort T.E. Bldg Fort, Bombay	India	MTNL, Mumbai	Corrosion protection to cols, beams and slab	Dec-00
MTNL Gamdevi T.E. Building Mumbai.	India	MTNI, Mumbai	Structural Strengthening & Protection of Columns, Beams and Slabs	Dec-00

MTNL TE Bldg, Byculla, Mumbai (Phase 1)	India	MTNL, Mumbai	Corrosion protection to columns, beams and slab	Feb-01
IOCL Pipeline Jetty, Mangalore	India	Indian Oil Corp. Ltd, Chennai	Corrosion Protection to Steel Pipeline	Feb-01
St. Thomas School, New Delhi.	India	In-House Design	Repairs & Structural Strengthening of Distressed Beams	Feb-01
MTNL T.E. Building, Sion, Mumbai	India	MTNL, Mumbai	Corrosion protection to columns, beams and slab	Mar-01
Casa Grand Society, Mumbai.	India	Mahimtura Consultants	Structural Strengthening of distressed Columns, Beams and Slabs	Mar-01
BSNL T.E. Building, Amreli, Gujarat.	India	BSNL, Gujarat	Structural Repairs & Strengthening of Columns Distressed due to Seismic Event.	Apr-01
BSNL Staff Quarters, Jamnagar, Gujarat.	India	BSNL, Gujarat	Structural Repairs & Strengthening of Columns Distressed due to Seismic Event.	Apr-01
MTNL T.E. Building Kidwai Bahvan, New Delhi. (Phase 1)	India	MTNL, New Delhi	Structural Strengthening & Protection of Columns, Beams.	Apr-01
Phoenix Mills Ltd., Parel, Mumbai	India	Mahimtura Consultants	Strengthening of Masonry Walls for Structural Integrity	May-01
Cryogenic Tank, Reliance Ports & Terminals, Jamnagar, Gujarat	India	Reliance Engg Associates	Repairs and Strengthening of Columns Distressed due to Seismic Activity	May-01
Kandla Port, Gujarat	India	Mahimtura Consultants	Seismic strengthening of columns	Jun-01
Laxmi Motors Showroom Gandhidham, Gujarat	India	In-House Design	Repairs and Strengthening of Columns Distressed due to Seismic Activity	Jul-01
MTNL, Hauz Khas T.E. Building, New Delhi	India	MTNL, New Delhi	Structural Strengthening of Columns	Jan-02
Param Plaza Bldg, Juhu, Mumbai	India	Mahimtura Consultants	Structural Strengthening of Columns due to Additional Loads	Feb-02
M/s. Misty International, New Delhi	India	In-House, Design	Beams and Columns Strengthening	Mar-02
Reserve Bank of India, Staff Quarters Chakala, Mumbai. (Phase I)	India	Mahimtura Consultants	Localised Strengthening of Beam Column Junctions	May-02
PWD Staff Qtrs, Kakkardooma, Delhi	India	PWD, Delhi	Repairs & Strengthening of Columns	Jul-02
NDMC Staff Qtrs, Pallika Milan, New Delhi	India	NDMC, New Delhi	Repairs & Strengthening of Columns	Aug-02
Hughes Telecom Bldg, Andheri, Mumbai	India	Mahimtura Consultants	Strengthening of Slab Panels due to Increased Loads	Nov-02
Janak Setu Flyover, Municipal Corp Delhi (1 Span Pilot Project)	India	NCCB, New Delhi	Structural Strengthening of Bridge Girders	Apr-03
Kakkad Chambers, Worli, Mumbai	India	Mahimtura Consultants	Structural Strengthening of Slab	May-03
Scottish Leela Lace Bldg, Andheri, Mumbai. (Phase I - IV)	India	Mahimtura Consultants	Structural Strengthening of Columns & Beams	Jun-03
Hotel Ramee, Dadar, Mumbai	India	Mahimtura Consultants	Strengthening of Columns for Increased Loads due to Addition of Floor	Jun-03
MTNL Admin Building Naigaon, Mumbai	India	MTNL, Mumbai / In- House	Structural Strengthening & Protection of Columns Beams	Jul-03

Roopam Bldg, Worli, Mumbai	India	Talaty & Panthky Associates, Mumbai	Structural Strengthening & Protection of Columns & Beams	Sep-03
Ashoka Society, Warden Rd, Mumbai	India	Mahimtura Consultants	Structural Strengthening of Columns of Parking Structure	Oct-03
MTNL T.E. Building Kidwai Bahvan, New Delhi. (Phase 2)	India	MTNL, New Delhi	Structural Strengthening and Protection of Columns and Beams	Oct-03
anchratna Bldg, Opera House, Mumbai	India	Mahimtura Consultants	Structural Strengthening of beams and Columns for Ductility Enhancement	Oct-03
Road Over-Bridge 235A, KRCL Madgaon, Goa	India	Konkan Railway Corp. Ltd	Beam Strengthening and corrosion protection	Nov-03
SBI Bldg, Worli, Mumbai	India	Mahimtura Consultants	Structural Strengthening of Circular Columns & Flat Slab	Dec-03
Snehal Society Bldg, Andheri, Mumbai	India	Mahimtura Consultants	Structural Strengthening of Columns & Beams.	Dec-03
MTNL T.E. Building, Vile Parle, Mumbai	India	Mahanagar Telephone Nigam Ltd, Mumbai	Structural Strengthening of Columns, Beams and Slabs	Jan-04
BSNL Staff Qtrs, Elevated Water Tank, Ahmedabad.	India	Bharat Sanchar Nigam Ltd, Amedabad	Structural Strengthening of Water Tank Staging Columns and Beams	Jan-04
Indian Oil Corp. , Refinery Panipat, Haryana	India	NIT, Kuruskshetra	Columns & Beams Repair and Strengthening	Feb-04
Suraj Apartments, Warden Rd, Mumbai	India	Mahimtura Consultants	Structural Strengthening of Columns & Beams due to additions & alterations	Feb-04
Ispat Industries, Dolvi, Pen	India	Manish Bhalla & Associates	Structural Strengthening of Columns, & Beams due to additions & alterations	Feb-04
Odessey II Apartments, Powai, Mumbai	India	Mahimtura Consultants	Structural Strengthening of Columns, & Beams due to additions & alterations	Feb-04
Blue Star Ltd. Prabhadevi, Mumbai	India	Mahimtura Consultants	Structural Strengthening of Columns & Beams.	Feb-04
IT Software Park, Hyderabad	India	C.R. Naryanrao & Associates, Chennai	Strengthening of Columns due to low grade concrete	Jul-04
Jindal House, New Delhi	India	ABM Architects, Mumbai	Seismic retrofit to load bearing brick wall structure	Oct-04
Inter State Bus Terminus, New Delhi	India	Delhi Transport Corporation	Columns Repair & Strengthening	Nov-04
Janak Setu Flyover, Municipal Corp Delhi (1 Span)	India	National Council for Cement & Bldg Materials	Structural Strengthening of Bridge Girders	Nov-04
Helens Court Bldg, Mumbai	India	Mahindra & Mahindra Ltd.	Slab & Beam Strengthening due to deterioration	Jan-05
MTNL T.E. Building, Fountain I, Mumbai (Phase 1)	India	MTNL, Mumbai	Structural Strengthening of Columns, Beams and Slabs	Jan-05
Sterling Apts, Mumbai	India	Mahimtura Consultants	Beam & Slab Strengthening	Jan-05
Khedshi Viaduct, KRCL, Ratnagiri	India	Konkan Railway Corp. Ltd	Localised Strengthening of T Beam Girders of Viaduct Span	Feb-05
Oceanic Apts, Bandra, Mumbai	India	Mahimtura Consultants	Columns strengthening	Feb-05
Winchester Bldg, Mumbai	India	Lakeview Developers, Mumbai	Column Strengthening due to additional loads	Mar-05
Tivoli Bldg, Mumbai	India	Hiranandani Const	Column & Slab Strengthening	Mar-05
Shreeniketan Bldg, Worli, Mumbai	India	Talathy & Panthaky Associates	Strengthening of Columns for Increased Loads	Ongoing
CST Airport Terminal 1B, Mumbai. (Phase 1)	India	Airports Authority of India	Column/Beam Joint Retrofit	Jul-05

Telephone Bhavan Bldg, Colaba, Mumbai (Phase1)	India	MTNL, Mumbai	Structural Strengthening & Protection to Columns, Beams	Ongoing
P&T Quarters, Ahmedabad, Gujarat	India	BSNL, Ahmedabad	Repairs & Strengthening to Staircase well roof Slab	Jul-05
Neptune Court, Mumbai	India	Lakeview Developers, Mumbai	Beam Strengthening and corrosion protection	Sep-05
Kimaya Showroom, Delhi	India	Gupta Consultants, Delhi	Heritage Structure, Masonry Walls & Arch Strengthening	Aug-05
Indian Oil Corp. , Refinery Vadodra, Gujarat	India	I.O.C.L / In-House	Flare Line Supports, Repairs & Strengthening	Oct-05
Leela Hotel, Kovalam, Kerala.	India	Semac Consultants, Bangalore	Strengthening & Corrosion Protection of columns	Ongoing
IT, Software Park, Bangalore	India	Engineering Consultants (India), Bangalore	Strengthening of columns due to low concrete grade	To commence
Narora Atomic Power Station, Narora	India	Indian Institute of Technology, Mumbai	Strengthening of ICW near raft junction of RB#1.	Sep-05
Okhla SISI Bldg.	India	C.PW.D	Strengthening of Beams & Columns	Sep-05
CST Airport Terminal 1B, Mumbai. (Phase 2)	India	Airports Authority of India	Column/Beam Joint Retrofit	Ongoing
Leela Palace, Udaipur, Rajasthan	India	Mahimtura Consultants	Strengthening of Beams & Columns	Ongoing
BSNL T.E. Building, Rohtak, Haryana.	India	Bharat Sanchar Nigam Ltd, Delhi	Strengthening of Beams & Columns	Oct-05
FAOC Building, Hissar, Haryana	India	HSAMB, Haryana	Strengthening of Columns	Oct-05

#### **List of installations for the TYFO® FIBRWRAP® Systems (Indonesia, Vietnam)**

<b><u>Project</u></b>	<b><u>Country</u></b>	<b><u>Client/Contractor/ Consultant</u></b>	<b><u>Type of Application</u></b>	<b><u>Installation</u></b>
PT. Yamaha Music Manufacturing Industry - Factory	Jakarta Indonesia	PT. Yamaha Music Manufacturing Industry/ PT. Takenaka Indonesia/ Novaars International	RC Beam strengthened for flexure using Tyfo® SCH41 and shear using Tyfo® SEH51A	Jul-05
Graha Utomo Building @Jalan Raden Saleh	Jakarta Indonesia	UTOMO/ PT. Tunggal Sarana Anda/ PT. Susanto Ciptajaya Corporation	RC Columns strengthened for seismic and axial enhancement using Tyfo® SEH51A	Sep-05
PT. Pertamina Balongan (Persero)	Balongan Indonesia	PT. Pertamina (Persero) Balongan	Repair and corrosion protection to oil storage steel tank using Tyfo® SEH25A	Oct-05
Bank NISP @Kelapa Gading	Jakarta Indonesia	NISP Bank/Fyfe Asia	RC Columns strengthened for seismic and axial enhancement using Tyfo® SEH51A due to structural upgrading	Oct-05
The Bellezza Permata Hijau	Jakarta Indonesia	PT. Bina Cipta Nusantara/ PT. Duta Rekayasa	RC Beam strengthened for flexure using Tyfo® SEH51A due to construction error	Nov-05
PT. Pertamina Balongan (Persero)	Balongan Indonesia	PT. Pertamina (Persero) Balongan	Repair and corrosion protection to roof tanks using Tyfo® SEH25A	Dec-05
PT. International Nickel Indonesia (INCO)	Sulawesi Indonesia	PT. International Nickel Indonesia (INCO)	Repair, corrosion protection and strengthening to steel roof of oil storage tanks using Tyfo® SEH25A	Jan-06

OHC REACTOR STRUCTURE @PT. Asahimas Indonesia	Cilegon Indonesia	PT. Asahimas Indonesia/ Fyfe Asia	Strengthening to reinforced concrete beams and columns due to corrosion using Tyfo <sup>®</sup> SEH51A and Tyfo <sup>®</sup> SEH25A with Tyfo <sup>®</sup> S Epoxy	On-going
Jetty @PT. Petrokimia Nusantara Interindo (PENI)	Cilegon Indonesia	PT. Petrokimia Nusantara Interindo/ Fyfe Asia	Repair and corrosion protection to steel piles using Tyfo <sup>®</sup> SEH25A with Tyfo <sup>®</sup> SW Epoxy	On-going
Lindeteves Trade Center	Jakarta Indonesia		Strengthening to reinforced concrete beams due to additional floors using Tyfo <sup>®</sup> SCH41, Tyfo <sup>®</sup> SEH51A and Tyfo <sup>®</sup> SEH25A with Tyfo <sup>®</sup> S Epoxy	On-going
Melinh Point Project, District 1	Ho Chi Minh Vietnam	Beca Carter	Strengthening of RC columns due to insufficient concrete strength using Tyfo <sup>®</sup> SEH51A	Jun-98
Duy Thanh Factory, TanBinh Industrial Park - Phase 1	Ho Chi Minh Vietnam	Duy Thanh Co., Ltd./ New C.C Construction Consultant Co., Ltd.	Strengthening of RC slabs for enhancement of positive and negative moments using Tyfo <sup>®</sup> SEH51A	Oct-05
Duy Thanh Factory, TanBinh Industrial Park - Phase 2	Ho Chi Minh Vietnam	Duy Thanh Co., Ltd./ New C.C Construction Consultant Co., Ltd.	Strengthening of RC slabs for enhancement of positive and negative moments using Tyfo <sup>®</sup> SEH51A	Feb-06

#### **List of installations for the TYFO<sup>®</sup> FIBRWRAP<sup>®</sup> Systems (Japan)**

<u>Project</u>	<u>Country</u>	<u>Client/Contractor/ Consultant</u>	<u>Type of Application</u>	<u>Installation</u>
Choujuen Housing Complex Hiroshima Prefecture	Japan	SE Engineering	Slab strengthening for flexural enhancement	Feb-06

#### **List of installations for the TYFO<sup>®</sup> FIBRWRAP<sup>®</sup> Systems (Thailand)**

<u>Project</u>	<u>Country</u>	<u>Consultant</u>	<u>Type of Application</u>	<u>Installation</u>
Phuket Yacht Club, Phuket	Thailand	E49 Engineering Consultants	Flexural and shear strengthening to beams due to corrosion. Enhancement to columns due to axial load increase.	Mar-96
Yaipian Bridge, Bangkok	Thailand	BMA	Strengthening and corrosion protection of columns, beams and slab.	Oct-00
Tolan Bridge, Bangkok	Thailand	BMA	Strengthening and corrosion protection of columns, beams and slab.	Nov-00
Surajatani Railway Station	Thailand	J. Builders	Flexural and shear strengthening to beams.	Jan-01
Commercial building, Lulli Village	Thailand	J. Builders	Flexural strengthening to beams.	Jun-01
Copper Oxide Building of Asian Chemical Co., Ltd., Welgo Industrial Estate, Rayong	Thailand	J. Builders	Strengthening and corrosion protection to columns and beams	Aug-01
Office Building, Bangkok	Thailand	J. Builders	Strengthening to columns slabs	Oct-01



Wat Sitaram School, Pomprab, Bangkok	Thailand	J. Builders	Strengthening to beams and slabs.	Feb-02
Multi story building, Rayong	Thailand	J. Builders	Strengthening to columns and slabs.	Jun-02
Vocational Training Building, Vocational Education Institute, Khon Kaen	Thailand	J. Builders	Flexural strengthening to beams.	Aug-02
Building of Nonthaburi Power Authority, Nonthaburi	Thailand	J. Builders	Flexural strengthening to beams.	Sep-02
Water Tower, Lucky Tech Factory	Thailand	J. Builders	Strengthening to columns and beams.	Nov-02
King Mongkut Hospital	Thailand	J. Builders	Strengthening to slabs	May-03
Library of the Development of Science Institute, Rajavithi, Bangkok	Thailand	J. Builders	Strengthening to beams and slabs.	Oct-03
Mahidol Bampen Building, Sirirat Hospital, Bangkok	Thailand	J. Builders	Strengthening to slabs and columns for rehabilitation of heritage building	Dec-03
Global Chemical Co., Ltd, Bangpoo Industrial Estate, Samut Prakran	Thailand	J. Builders	Strengthening to columns and beams due to corrosion.	Dec-03
Suan Kulab Navamin Rachinothit School, Samut Prakran	Thailand	J. Builders	Flexural strengthening to beams.	Jan-04
Global Chemical Co., Ltd, Bangpoo Industrial Estate, Samut Prakran	Thailand	J. Builders	Strengthening and corrosion protection to columns and beams	May-04
Harbour Board	Thailand	J. Builders	Strengthening to columns using carbon fibre	Sep-04
Tep Kinsho Foods Co., Ltd	Thailand	J. Builders	Strengthening & corrosion protection to RC slabs	Oct-04
Global Chemical Co., Ltd, Bangkok	Thailand	J. Builders	Strengthening and corrosion protection to columns, beams and slabs	Jul-04
Port Authority of Thailand BMA Building	Thailand	J. Builders	Strengthening to columns	Sep-04
	Thailand	J. Builders	Strengthening to RC lift core wall	Nov-04
Pisanulok Hospital, Bangkok	Thailand	J. Builders	Strengthening to beams	Nov-04
Saha Union Textile, Bangkok	Thailand	J. Builders	Strengthening to beams	Nov-04
Ranong School, Bangkok	Thailand	J. Builders	Strengthening to beams	Nov-04
NL. Development Co., Ltd	Thailand	J. Builders	Strengthening to beams with live-load testing	Dec-04
BMA Building	Thailand	J. Builders	Strengthening to columns for enhancement to compression capacity	Feb-05
Yarnapund Co. Ltd, 4-Storey Office Building	Thailand	GroupMech	Strengthening to existing Precast slabs, RC beams and columns	Jul-05
KA Building	Thailand	J. Builders	Strengthening to beams	Nov-05
Pa-Op Building @Sirirat Hospital	Thailand	J. Builders	Flexural strengthening to beams.	Dec-05
Sookjai Restaurant under the Thai Post Army	Thailand	J. Builders	Strengthening and corrosion protection to RC beams for sea-front structure	On-going

**List of installations for the TYFO® FIBRWRAP® Systems (Philippines)**

<u>Project</u>	<u>Country</u>	<u>Consultant</u>	<u>Type of Application</u>	<u>Installation</u>
Mercury Drug Store, Manila	Philippines	EC Structural Composites Inc.	Strengthening of slab due to increased loads	Mar-01

Mercury Drug Whse Manila	Philippines	Mendoza Engineering	Slab strengthening for flexural capacity	Mar-01
LRT-3 Project, Manila	Philippines	North Star Technologists	Column strengthening for additional confinement	May-01
LRT-3 Project, Manila	Philippines	In-house	Column strengthening for additional confinement	May-01
Blumentritt Building Manila	Philippines	EC Structural Composites Inc.	Flexural strengthening of beams	Jul-01
Blumentritt Building, Manila	Philippines	In-house	Repair & strengthening of cantilever beams for shear capacity	Jul-01
Solid Cement Corp.	Philippines	SCC, In-house	Strengthening columns for shear capacity in cement plant	Sep-01
San Miguel Corp. La Tondena Distillery	Philippines	SMC, In-house	Repair, strengthening and corrosion protection of waste water pond	Dec-01
Int'l. Container Terminals Inc. (ICTSI)	Philippines	ITCSI, In-house	Corrosion protection of steel mono-tube piles	Apr-02
Jose Rizal University, Manila	Philippines	QCSI Consultancy	Repair and strengthening of cantilever beams for shear capacity	Apr-02
Phil. National Bank Financial Center, Manila	Philippines	PNB, In-house	Strengthening and leak repair of FRP pipes	Apr-02
Cabilawan Bridge, Antique - Asian Development Bank (ADB) Project	Philippines	BCEOM /Everest/Angel Lazaro/UICI	Repair and strengthening for flexure and shear	Jun-02
Sta Cruz Bridge, Antique - ADB Project	Philippines	BCEOM /Everest/Angel Lazaro/UICI	Repair and strengthening for flexure and shear	Jun-02
Old Cala-Cala Bridge, Antique - ADB Project	Philippines	BCEOM /Everest/Angel Lazaro/UICI	Repair and strengthening for flexure and shear	Jul-02
Cebu Port Authority, Cebu-City	Philippines	CPA, In-house	Strengthening and corrosion protection of Batter Piles	Oct-02
Supreme Court of the Phils.	Philippines	Trans-Asia(Phils) Inc./ Pimentel and Asso.	Strengthening of cantilever beams and girders	Nov-02
Phil. Ports Authority, Port of Cagayan De	Philippines	PPA, In-house	Strengthening and corrosion protection of piles	Mar-03
Cairawan Bridge, Antique - ADB Project	Philippines	BCEOM /Everest/Angel Lazaro/UICI	Repair and strengthening for flexure and shear	Mar-03
Phil. National Oil Company, Batangas	Philippines	PNOC, In-house	Strengthening and corrosion protection of vessel damaged beams and piles	Apr-03
Tul-Ang Bridge, Antique - ADB Project	Philippines	BCEOM /Everest/Angel Lazaro/UICI	Repair and strengthening for flexure and shear	Apr-03
Dalanas Bridge, Antique - ADB Project	Philippines	BCEOM /Everest/Angel Lazaro/UICI	Repair and strengthening for flexure and shear	May-03
Intao Bridge, Antique - ADB Project	Philippines	BCEOM /Everest/Angel Lazaro/UICI	Repair and strengthening for flexure and shear	May-03
5 storey Vitas Tondo Bldg., Manila	Philippines	In-house consultant	Repair and strengthening of columns and beams	Jun-03
Langawon Bridge, Antique - ADB Project	Philippines	BCEOM /Everest/Angel Lazaro/UICI	Repair and strengthening for flexure and shear	Jun-03
San Antonio Bridge, Antique - ADB Project	Philippines	BCEOM /Everest/Angel Lazaro/UICI	Repair and strengthening for flexure and shear	Jun-03
Net 1 Center, Manila	Philippines	Meinhardt Phils. Inc.	Repair and strengthening of slabs and beams for increase in loads	Aug-03

Balabago Bridge, Antique - ADB Project	Philippines	BCEOM /Everest/Angel Lazaro/UICI	Repair and strengthening for flexure and shear	Aug-03
Vishay Phils.Inc. FTI Compounds	Philippines	FD Partners & Co	Repair and strengthening of machine foundation	Dec-03
2 Storey Residential with attic -East Greenhills	Philippines	Design Tech	Repair and strengthening for flexural and shear	Dec-03
Manicahan Bridge, Zamboanga-ADB Project	Philippines	BCEOM /Everest/Angel Lazaro/Mansueto	Repair and strengthening for flexural and shear	Feb-04
Far East Alcohol Corp. Apalit, Pampanga	Philippines	In-house consultant	Repair and strengthening for flexural and shear	Feb-04
HPN BLDG. NAVAL Station, Roxas Blvd, Pasay City	Philippines	In-house consultant	Repair and Strengthening of column	Apr-04
Phil. Ports Authority, Port of Pulupandan Negros Occidental	Philippines	PPA, In-house	Strengthening and Corrosion protection of steel piles	May-04
Asian Montessori, San Fernando, Pampanga	Philippines	In-house consultant	Repair and strengthening of slabs and beams	May-04
Nestle Philippines Cagayan De Oro	Philippines	EM²A Partners & Co	Repair and strengthening of slabs and beams	Jun-04
Pilipinas Shell Petroleum Corp., Tabangao Refinery Batangas, City	Philippines	In-house	Repair And Strengthening Of Tank Support	Jul-04
Wyeth Phils. Inc Makati City	Philippines	TCGI Engineers	Repair and strengthening of slabs and beams	Sep-04
Asian Terminal Inc. Port Area, Manila	Philippines	In-house	Strengthening and Corrosion Protection Of Steel Piles	Oct-04
RFM Corporation Mandaluyong City	Philippines	In-house	Repair and strengthening of Silo wheat Bins	Oct-04
Pilipinas Shell Petroleum Corp., Tabangao Refinery Batangas, City	Philippines	In-house	Repair and strengthening of Tank Support using TYFO SEH-25A	Nov-04
Sixth ADB Road Project Road Improvement Composite Contract Package 6PY-1 Patnongon- Culasi Section Antique	Philippines	Chins State eng'g construction Corp. and BCEOM/UICI	Bridge Girder repair / strengthening using TYFO SEH-51	Dec-04
Sixth ADB Road Project Road Improvement Composite Contract Package 6PY-12 Culasi-Nabas Section, Antique	Philippines	FF Cruz & Co., Inc. BCEOM / UICI	Bridge Girder repair/strengthening using TYFO SEH-51	Dec-04
BOGO Water District Bogo, Cebu	Philippines	In-house	Strengthening of 600cubic meter ground Water Reservoir using TYFO SEH-51	Jan-05
Konstrak International Quezon City	Philippines	R.A. Tiburcio & Associates	Strengthening of Beams ( Flexural) using TYFO SEH-51 System	Feb-05
Aura Builders Quezon City	Philippines	R.A. Tiburcio & Associates	Strengthening of RC Beams KOTEH Residence, Corinthian Hills using TYFO SEH-51 System	Feb-05
Sabang Bridge Rehabilitation Ibaan, Batangas City	Philippines	In-house	Strengthening of Arc Bridge Columnn using TYFO SEH-51A System	Mar-05
Mall of Asia, Roxas Blvd Manila	Philippines	in-house	Strengthening of beam using TYFO SCH-11UP Composite System	Apr-05

DAEWOO Eng'g. & Co. Ltd. Trento, Agusan Del Sur	Philippines	Katahira	Repair / Strengthening of Sulibao Bridge using TYFO SCH-11 UP Composite	May-05
Virra Mall, Greenhills San Juan, Metro Manila	Philippines	G.G. Sta. Maria Contruccion	Strengthening of beam using TYFO SCH-41 System	Jun-05
Shell Refinery, Tabangao	Philippines	In-house	Corrosion protection of steel tank using TYFO S E H-55H System	Jul-05
Robinson Cybergate Pioneer, Mandaluyong	Philippines	In-house	Strengthening of beams and slabs using TYFO SEH-51A and TYFO SCH 41	Jul-05
PNOC Petrochemicals Mariveles, Bataan	Philippines	In-house	Repair and Restoration of Damage RC Beams using TYFO SEH 51A	Jul-05
Nestle Philippines Cabuyao Laguna	Philippines	In-house	Strengthening of beams and columns using TYFO SEH-51A System	Sep-05
Monolith Const'n Dev't Corp. SM Mall of Asia, North Parking	Philippines	ESCA	Flexural Strengthening of Slab using TYFO SCH 41 and TYFO SEH 51A	Nov-05
Nestle Philippines , Inc. Cagayan De Oro City	Philippines	EM²A Partners & Co	Slab Flexural Strengthening using TYFO SEH 51A	Dec-05
Wyeth Phils. Inc Canlubang Plant	Philippines	TCGI Engineers	Beam Strengthening using TYFO SEH 51A	Dec-05
Sixth Road Project Bridge Component ADB Loan No. 1473, PHI JEXIM UNITED Loan, contract package 8	Philippines	Angel Lazaro and Associates Everest Int'l Consultants, Inc.	Sumlog Bridge Retrofitting (Slab Flexural Strengthening, Girder Beam/Coping Beam, Shear Flexural Strengthening) using TYFO SEH 25A, TYFO SEH 51A and TYFO SCH 41	on going
WHO Building Cor. Taft Ave. and U.N. Ave. Manila.	Philippines	C.C. Pabalan and Associates	Column Shear and Flexural Strengthening using TYFO SCH 11 UP and SCH 41	on going
FEATI Building 1 FEATI University Carlos Palanca St. Metro Manila	Philippines	DCCD Engineering Corp.	Shear Wall Strengthening using TYFO SEH 51A and TYFO SEH 25A	on going
Canyon Woods Residential Resort Phase 3B, Laurel, Barangas	Philippines	BBR Philippines Corp.	Shear Strengthening of Columns using TYFO SEH51A	on going

**List of installations for the TYFO® FIBRWRAP® Systems (China, Hong Kong, Taiwan)**

<u>Project</u>	<u>Country</u>	<u>Consultant</u>	<u>Type of Application</u>	<u>Installation</u>
Shekou Port	China	China Harbour - in House	Corrosion protection to steel piles	Dec-99
Suzhou-Yinghu Bridge	China	Suzhou Transport Design Institute	Strengthening to 22 hollow core bridge slabs	May-00
Kunshan-Tongcheng River Bridge	China	Suzhou City Construction Institute	Repair and strengthening of T-beams due to shear and flexure deficiencies and of columns due to deficiency in axial capacity	Jun-00
Jiangsu Chinese Medical Hospital	China	Nanjing Building Design Institute	Strengthening of staircase beams	Jul-00
Hangzhou Wahaha Primary School	China	Zhejiang Mechanical Design Institute	Beam strengthening due to cracks near openings	Aug-00

Suzhou-Taichung bridge	China	Suzhou Transportation Design Institute	Bridge retaining wall strengthening	Sep-00
Lishui Hydro-Power Station	China	Zhejiang Hydro-Power Design Institute	Strengthening of 12 beams for flexure	Dec-00
Kunshan Shipai Bridge	China	Suzhou Road Management Bureau	Restoration of an arch bridge	Jan-01
Hangzhou Hydro Power College	China	Zhejiang Hydro-Power Design Institute	Strengthening to beams and slabs	Apr-01
Shanghai Research Standard Building	China	Shanghai Light Industry Department Design Institute	Strengthening due to increase of live load from 2kN/m <sup>2</sup> to 7kN/m <sup>2</sup>	Apr-01
Shanghai Wenhua Carden	China	Shanghai City Design Institute	Strengthening of 15 staircase beams	May-01
Shanghai Natieta Factory	China	Shanghai Mechanical Design Institute	Seismic retrofit to 20 columns	Jun-01
Chao Yang South Bridge	China	Liaoning Transportation Design Institute	Strengthening of joints of arch bridge	Jul-01
Taizhou Telecom Building	China	Zhejiang Telecom Design Institute	Roof slab and beam strengthening	Jul-01
Tong Jiang Kou Bridge	China	Liaoning Transportation Design Institute	Strengthening of 35 bridge spans due to load increase	Jul-01
Wenzhou Sluice Gate	China	Zhejiang Hydro-Power Design Institute	Strengthening of concrete sluice gate	Jul-01
Hangzhou Chinese Medical Hospital	China	Zhejiang Rural Design Institute	Strengthening to RC shear walls	Aug-01
Hangzhou Yuhang Primary School	China	Zhejiang University	Retrofitting of slabs in a 5-storey building	Aug-01
Shanghai Huizhong Factory	China	Shanghai Mechanical Design Institute	Seismic retrofitting to 112 columns	Aug-01
Xiao Jiaba Bridge	China	Sichuan Transportation Design Institute	Strengthening of 120m span concrete-arch bridge	Aug-01
Long Dongbai Bridge	China	Sichuan Transportation Design Institute	Strengthening of 120m span concrete-arch bridge	Sep-01
Nigbo Bank Building	China	Hangzhou City Construction Institute	Strengthening of RC beams	Sep-01
Shanghai Minhang Electricity Power Plant	China	Tonggi University Design Institute	Strengthening of columns and brick walls	Sep-01
Suzhou Xing-Xiu Bridge	China	Suzhou Road Management Bureau	Restoration of an old arch bridge	Sep-01
Huzhou Wufeng Cold Storage Factory	China	Hangzhou City Design Institute	Strengthening of slabs soffit	Oct-01
Shanghai Wenxing Electrical Factory Office Floor	China	Shanghai Tonggi Administration Design Office	Columns and walls strengthening	Oct-01
Jiangsu Yan City River Bridge	China	Yan City Department of Transport	Beams and slabs strengthening to increase loadbearing capacity	Nov-01
Jiangsu Yan City River Bridge 1	China	Nanjing Aerospace University	Strengthening of beams and slabs	Nov-01
Jiangsu Yan City River Bridge 2	China	Nanjing Aerospace University	Strengthening of beams and slabs	Nov-01
Jiangsu Yan Province South River Bridge	China	Yan City Department of Transport	Beams and slabs strengthening to increase loadbearing capacity	Nov-01
Shanghai Yonghua Complex	China	Shanghai Huangbu Design Institute	Lift Core beams and slabs strengthening	Nov-01
Zhejiang Jiaxin Complex	China	Zhejiang Post Office Design Institute	Beams and slabs strengthening due to live load increase from 2kN/m <sup>2</sup> to 5kN/m <sup>2</sup> capacity	Nov-01
Zhejiang Wenzhou Complex	China	Zhejiang City Planning Design Institute	Beams and slabs strengthening	Nov-01
Lishui City Center Hospital	China	Hangzhou Coal and Gas Department Design Institute	Columns strengthened due to additional floors introduced	Dec-01

Shanghai Garment City	China	Beijing Weston Shanghai Design Co.	Beams strengthened due to increase in live load	Dec-01
Shanghai Pudong Development	China	Shanghai Modern Design Group	Beams strengthening	Jan-02
Zhejiang Jiaxing Hydro Power Project	China	Zhejiang Hydro-Power Design Institute	Strengthening and crack control	Feb-02
24 Hangzhou Jiannan	China	Hangzhou City Development Design Institute	Strengthening and crack control	Mar-02
Zhejiang Jiaxing Hydro Power Station	China	Zhejiang Hydro-Power Design Institute	Strengthening and crack control	Mar-02
Hangzhou Gonglian Jingpin Center	China	Zhejiang Industry Design Institute	Strengthening due to increase of live load	May-02
Shanghai Jingqiao Government Building	China	Chuanbai Industry No 9 Design Institute (Shanghai)	Strengthening to opening in shear walls	May-02
Wenzhou Postal Company	China	Hangzhou Coal and Gas Department Design Institute	Beams and slabs strengthening	May-02
Zhangjia Harbour Bridge1	China	Suzhou Department of Transport	Beams and slabs restoration and strengthening	May-02
Zhangjia Harbour Bridge2	China	Suzhou Department of Transport	Beams and slabs restoration and strengthening	May-02
Xingfu Bridge Privately Owned By Chuanwei Group, Guisha	China	Sichuan Transportation Design Institute	Bridge underdeck strengthening	Jul-02
Zhejiang taizhou Xinghe yuan area	China	-	Strengthening to beams to achieve higher structural grading	Jul-02
Zhejiang Huangyantiandai Health and fitness centre	China	Zhejiang province industry design institute	Strengthening to beams and slabs to increase loading capacity	Aug-02
Shanghai wei tang school archives	China	Shanghai Modern Design Institute	Strengthening to increase loading capacity	Sep-02
Shanghai Electric Power Heating communications center building	China	Zhejiang City Industry design institute	Strengthening to 3rd and 4th storey to increase loading capacity	Oct-02
Guangzhou Huanan Road bridge no. 0 circle	China	Railway design institute	Strengthening to ground beam at intersection	Nov-02
Shanghai Baogang Center Electric Room	China	Baogang group design institute	Strengthening to main beam of 2nd storey workshop	Nov-02
Guanguan Yao, Zhizhu Gang Bridges, Chengdu	China	No 2 Railway Design Institute	T- Beams Strengthening	Dec-02
Liaoying Bridge, Chengdu	China	No 2 Railway Design Institute	Slabs Strengthening	Dec-02
Zhejiang na ai shi group	China	-	Crack repair to workshop columns	Dec-02
Shanghai kangqiao peninsula	China	Shanghai Structural Accreditators Design Institute	Strengthening to beams and slabs of villa	Jan-03
Shanghai Shengwo Nol. 4 Car workshop	China	Shanghai Mechanical Design Institute	Strengthening to improve loading capacity	Jan-03
Duanyi electric lighting company. Suzhou Branch	China	Suzhou Bulding materials and construction design institute	Strengthening to increase loading as well as to improve flexural and shear capacity of beams	Feb-03
Shanghai ChangXingDao Chenghua Harbor machinery, Changxing base	China	Shanghai Structural Accreditators Design Institute	Repair to cracks on main columns, inclusive of strengthening	Feb-03
Shanghai wei tang school administrative floor	China	Shanghai Modern Design Institute	Strengthening to portal	Mar-03

Shanghai Xianfeng Electronics	China	Shanghai foodstuff design institute	Renovation to office involving strenthening	Mar-03
Shanghai Shengwo No.5 & 6 Car workshop	China	Shanghai Mechanical Design Institute	Strengthening to improve loading capacity	Apr-03
Shanghai ZhongKai light of the city	China	Shanghai Construction Design Institute	Strengthening to increase roof loading capacity	Apr-03
Shanghai Aijian Garden	China	Shanghai Aijian Design Institute	Strengthening to improve shear strength at door frames	May-03
Shanghai Jingan Yangguang Mingdu	China	Shanghai Aijian Design Institute	Strengthening to staircase wall	May-03
Yuegou shanghai jingan supermarket	China	Shanghai Zhongfanf Construction Design Institute	Strengthening works to 2 levels of basement	May-03
Shanghai Di-ou Café	China	Shanghai Bao-li Design Company	Modification and strengthening to brick walls	Jun-03
Shanghai Yonghua Building	China	Shanghai Huangpu Design Institute	Roof beam strengthening	Jun-03
Zhangjiagang 338 lane, Laogang bridge	China	Hangzhou Public Tranport Department	Strengthening beams and slabs and renovation to bridge surface	Jun-03
Zhangjiagang 338 lane, Wuxing bridge	China	Hangzhou Public Tranport Department	Strengthening beams and slabs and renovation to bridge surface	Jun-03
Anwei Gaojie Gaosu Ruan Corporation Bridge 157k+117	China	Anwei Ganghang Survey and design Institute	Strengthening to beams to increase loading capacity	Jul-03
Anwei Gaojie Gaosu Ruan Corporation Bridge 157k+237.5	China	Anwei Ganghang Survey and design Institute	Strengthening to beams and slab soffit to increase loading capacity	Jul-03
Anwei Gaojie Gaosu Ruan Corporation Bridge 157k+471	China	Anwei Ganghang Survey and design Institute	Strengthening to beams and slab soffit to increase loading capacity	Jul-03
Anwei Gaojie Gaosu Ruan Corporation Bridge 157k+740.5	China	Anwei Ganghang Survey and design Institute	Strengthening to beams and slab soffit to increase loading capacity	Jul-03
Dafeishui Bridge, Chengdu	China	South West University Retrofit Research Institute	Beams and slabs strengthening	Jul-03
Meilong Paper Company (Taicang) Pte Ltd	China	ChuanBo industry no.9 design institute	Corrosion prevention works to pipes	Jul-03
Shanghai Shajin lihua Commercial Building, Block 3 and 4	China	Fanhua Projects Pte Ltd Design Department	Strengthening to lift shaft	Jul-03
Shanghai Foreign Languages University	China	Shanghai Yangpu Design Pte Ltd	Staircase and classroom slabs strengthening	Aug-03
Shanghai Post Office Building	China	Shanghai JiuJian strengthening Pte Ltd	Roof surface and sky window retrofitting	Sep-03
ShiZhou Zhilu Hotel	China	Shanghai He Industry Design Institute	Shear wall opening and slab opening strengthening works	Sep-03
SuZhou Jicang Road SanJing Bridge	China	Anwei Ganghang Survey and design Institute	Strengthening to beams to increase loading capacity	Sep-03
Commercial Complex, Nanchong, Sichuan	China	South West University Retrofit Research Institute	Basement strengthening against impact from controlled demolition using explosives	Oct-03
Jiaxing Electric Factory	China	Shanghai Electricity Design Institute	Strengthening to warehouse ramp supports	Oct-03
Suzhou Wufu Bridge	China	Suzhou road department	General repair of bridge structure and strengthening	Oct-03
Hangzhou youjia advanced mechanics factory	China	Zhejiang mechanical design institute	Strengthening to office beams, columns and slabs	Oct-03

Shanghai gas exploration company	China	China Construction Technology Pte Ltd	Strengthening to columns	Oct-03
Shanghai lifescience Message center hostel	China	Fanhua Projects Pte Ltd	Strengthening using carbon fibres to beams and slabs	Oct-03
Yangguan Garden, Chengdu	China	South West University Research Institute	Slabs strengthening due to increased flexural load	Nov-03
Zhang Jia Gang si Gang Bridge	China	Shanghai Durab Retrofitting	T- Beams Strengthening	Nov-03
Weijiang Bridge, Qingchen Mountain, Chengdu	China	South West University Retrofit Research Institute	Beams and piers strengthening	Dec-03
Anwei Hexu Highway K9+994 Bridge	China	Shanghai Durab Retrofitting	Strengthening due to increased loading	Jan-04
Anwei G311 SiZhou Bridge	China	Shanghai Durab Retrofitting	Structural strenghtening of T Beams	Mar-04
Shanghai Bund 18	China	Tong Ji construction design and research institute	Strengthening to exterior walls	Mar-04
Suzhou Tonghe bridge	China	Shanghai Durab Retrofitting	Repair and Strengthening works to underside of Bridge	Mar-04
Shanghai Guoyun Hotel	China	Shanghai Durab Retrofitting	Beams and slabs strengthening by using TYFO® system	Jan-05
Loumann (Shanghai) Chemicals Company Factory	China	Shanghai Durab Retrofitting	Seismic Strengthening and increase Loading capacity	Feb-05
Shanghai Mei Hua Mei Chemical Works Factory	China	Shanghai Durab Retrofitting	Seismic Strengthening and increase Loading capacity	Feb-05
An Hui 318 High way Chezhou Temple Bridge	China	Shanghai Durab Retrofitting	Structural strengthening by using TYFO® system	Mar-05
An Hui Hetong Road Bridge	China	Shanghai Durab Retrofitting	Beam repair and strengthening works	Mar-05
An Hui Qianshan Road Bridge	China	Shanghai Durab Retrofitting	Crack strengthening by using TYFO® system	Mar-05
Anhui Hetong Road K99-200 Bridge	China	Shanghai Durab Retrofitting	Post Collision repair to T-Beam	Mar-05
Huayan handcraft Pte Ltd	China	Shanghai Durab Retrofitting	Columns strengthening by using TYFO® system	Mar-05
Jinshan ZiShijing Bridge, Shanghai	China	Shanghai Durab Retrofitting	Crack repair and strengthening by using TYFO® system	Mar-05
KunShan Municipality DaZhiGang bridge	China	Shanghai Durab Retrofitting	Seismic Strengthening	Mar-05
No. 320 National Highway Shanghai XinZhiShiJin Bridge	China	Shanghai Durab Retrofitting	20m Span box girder strengthening	Mar-05
Shanghai Wai Gao Qiao Container Port	China	Shanghai Durab Retrofitting	Column strengthening, steel plate bonding and CFRP works	Mar-05
Bund No. 18, Shanghai	China	Shanghai Durab Retrofitting	Strengthening to safe vault using Tyfo fiberwrap	Apr-05
Liao Ning Duituo Bridge	China	Shanghai Durab Retrofitting	Slabs and beams repair and strengthening by using TYFO® system	Apr-05
Liao Ning HaiCheng municipality DuiLun Bridge	China	Shanghai Durab Retrofitting	TYFO SEH51 and SEH25 strengthening	Apr-05
Liao Ning Liao River Bridge	China	Shanghai Durab Retrofitting	Slabs and beams repair and strengthening by using TYFO® system	Apr-05
Liao Ning LiaoHe Bridge	China	Shanghai Durab Retrofitting	TYFO Fibrwrap	Apr-05



Shanghai Dazhong Building	China	Shanghai Durab Retrofitting	Beams and slabs strengthening by using TYFO® SCH,UC	Apr-05
Shanghai Elevated Highway Viaducts	China	Shanghai Durab Retrofitting	Seismic Strengthening and increase Loading capacity	Apr-05
Shanghai Zhaogao highway Gaoqiaogang Bridge	China	Shanghai Durab Retrofitting	Structural repair and strengthening to the main bridge span which was damaged by ships.	Apr-05
SuZhou No. 338 highway Yaojing Bridge	China	Shanghai Durab Retrofitting	Retrofitting, repaving	Apr-05
Tang Shan Sanyou Group Office Building	China	Beijing BoDong Bo	Structural strengthening	Apr-05
Yun Nan Zhuxiong-Dali highway no. K066+950 Bridge	China	Shanghai Durab Retrofitting	Slab repair by using TYFO® system	Apr-05
Yunnan Chuxiong Dali highway	China	Shanghai Durab Retrofitting	TYFO SEH51 and SEH25 strengthening	Apr-05
Business Trade Hotel streaming potential health club, Kun Shan	China	Shanghai Durab Retrofitting	Beams and slabs strengthening by using TYFO® system to sustain higher load	May-05
Dapu Road Culture Center, Shanghai	China	Shanghai Durab Retrofitting	Seismic Strengthening by using TYFO® system	May-05
Jin Shan Sanxin Bridge, Caojing Bridge, Jiebu Jing Bridge, Shanghai	China	Shanghai Durab Retrofitting	Crack repair, and structural strengthening by using TYFO® system to extend their service lives	May-05
Shanghai Jin San Jin Zhang Road Chao Jing Bridge	China	Shanghai Durab Retrofitting	Structural Strengthening due Aging	May-05
Zhashui River Bridge, An Hui	China	Shanghai Durab Retrofitting	Structural strengthening for the bridge by using TYFO® System	May-05
Zhu Jiang Dijing Heating Station	China	Beijing BoDong Bo	Structural strengthening	May-05
Office building of Shanghai Laser department	China	Shanghai Durab Retrofitting	Slabs and columns strengthening by using TYFO® System	Jun-05
Zhongshan Hospital No.3 Building 2nd storey , Shanghai	China	Shanghai Durab Retrofitting	4 Columns strengthening by using TYFO® System	Jun-05
An Hui Liahua Highway Bridge k280+615、 Bridge k250+103 ZhuYun Pier A07、 A10 Repair and Strengthening Project	China	Shanghai Durab Retrofitting	Pier and column strengthening by using TYFO® System	Jul-05
Kun Shan Yanlin Precise Electronic Instrument Produce Company Office Building Structural Strengthening Project	China	Shanghai Durab Retrofitting	Beam and Slab strengthening to Increase its bearing capacity by using TYFO® System	Jul-05
Phase 2 of KangXing Estate	China	Fyfe China	Strengthening of Beams	Jul-05
Pump Station at He Bei Qianan Rongxi Group	China	Beijing BoDong Bo	Structural strengthening	Jul-05
Shanghai Jiading Yagu Light and Electricity Technology Factory Floor Strengthening Project	China	Shanghai Durab Retrofitting	Crack repair and strengthening by using TYFO® System	Jul-05
China Construction Bank's Documentation Room in Shanghai, MingHang	China	Shanghai Durab Retrofitting	Beam and Slab Strengthening to sustain higher loading.	Aug-05

Da Tong QingHuang Island Zhongtie Signal Conversion Station, Cuiping Mountain Station, Yanlu Station	China	Beijing BoDong Bo	Structural strengthening	Aug-05
Expansion works to Shanghai XinXin Building. Works include addition of new story.	China	Shanghai Durab Retrofitting	Structural Strengthening for the Building to sustain higher loading	Aug-05
JiaXinXingJia AiShi galvanothermy Pte Ltd	China	Shanghai Durab Retrofitting	Strengthening Works by using TYFO® System	Aug-05
Zhe Jiang Yuhuan Automobile Center 110KV Substation	China	Shanghai Durab Retrofitting	Columns Strengthening by using TYFO® System	Aug-05
6 Bridges along Gao Jie Highway K143 to K236	China	Shanghai Durab Retrofitting	Structural Strengthening to LiangTing Bridge, ChengXi Bridge and 4 other bridges.	Sep-05
ShiEr community cultural activity center, Shanghai	China	Shanghai Durab Retrofitting	Beam and Slab Strengthening	Sep-05
XingTai National Highway 107 XiaoHuai River Bridge, He Bei and Feng Village Culvert	China	Shanghai Durab Retrofitting	Cracks Repair and Strengthening Works	Sep-05
Zhe Jiang ZhaPuZa Bridge, WangDian Bridge and LuJia Bridge	China	Shanghai Durab Retrofitting	Structural Strengthening works	Sep-05
Cultural Museum, JingAn, Shanghai	China	Shanghai Durab Retrofitting	Strengthening works to 55 years old historical building	Nov-05
Finance Development Pte Ltd's Office, Minqian, Shanghai	China	Shanghai Durab Retrofitting	Beam Strengthening	Nov-05
Beijing Jiuyi Primary School	China	Beijing BoDong Bo	Structural strengthening	Dec-05
Phase 1 of Shanghai KangCheng	China	Shanghai Durab Retrofitting	Slab Reinforcement and crack repair	Dec-05
Highway K260, TongXun, Jiang Su	China	Shanghai Durab Retrofitting	Structural strengthening of Highway after fire incident	Oct-05
Highway's Bridges, XuanGuang, An Hui	China	Shanghai Durab Retrofitting	Strengthening of Bridges to sustain increased loading.	Oct-05
Su Zhou San Shen Bridge	China	Shanghai Durab Retrofitting	Structural strengthening of T Beams due to increased loading	Aug-04
Beijing Capital Airport	China	Shanghai Durab Retrofitting	Structural repair and strengthening of Aerobridge	Jul-04
Shenyang East GaTu Bridge	China	Shanghai Durab Retrofitting	Strengthening of Structure and changing of Expansion Joints.	Jul-04
Shenyang Gong Zu Dun Bridge	China	Shanghai Durab Retrofitting	Strengthening of Structure and changing of Expansion Joints.	Jul-04
Shenyang Man Du Hu Bridge	China	Shanghai Durab Retrofitting	Strengthening of Structure and changing of Expansion Joints.	Jul-04
Su Zhou North Bridge	China	Shanghai Durab Retrofitting	Structural strengthening of T Beams	Jun-04
Anwei Lian Huo Highway K237+900,K280+600 and Zu wei zi A07, A10 Bridges	China	Shanghai Durab Retrofitting	Repair and Strengthening of Bridges due to increased loading`	Nov-04
Lamma Island Jetty	Hong Kong	China Harbour	Underwater steel pile corrosion protection	Sep-97
HEC Steel Pile Corrosion Protection	Hong Kong	Hong Kong Electric	Underwater corrosion protection to steel pipes	Oct-97

Mass Rapid Transit Corporation	Hong Kong	MTRC	Strengthening of Airport railway concrete parapet walls	Oct-97
Houston Centre	Hong Kong	L&M Specialist Construction Ltd.	Strengthening and repair to cooling mains	Mar-98
HEC Steel Pile Corrosion Protection	Hong Kong	Hong Kong Electric	Corrosion protection to 500 marine piles	Mar-99
Hong Kong Electric Co.	Hong Kong	Hong Kong Electric	Strengthening of damaged fender column	Jul-99
Hong Kong-Macau Ferry Terminal	Hong Kong	Civil Engineering Department, Government of Hong Kong - SAR	Strengthening of concrete beams and strengthening/corrosion protection of steel piles	Jul-01
Property development in Fanling	Hong Kong	Wong & Cheng Consultants	Strengthening to concrete waffle slab	Nov-01
Sino-Yau Tong Canopy Strengthening	Hong Kong	Wong & Cheng Consultants	Strengthening to concrete canopy	Mar-05
Chinese University Sport Centre Roofs	Hong Kong	Wong & Cheng Consultants	Reinforcement to concrete roof slab	May-05
WDS-Water treatment facility	Hong Kong	WSD	Corrosion protection and strengthening to concrete slab of water treatment tank	May-05
KCRC-Sino Ho Tong Lau Drain Pipe	Hong Kong	Ove Arup	Strengthening and pipe lining	Jun-05
WSD-Valve House Slab	Hong Kong	WSD	Corrosion protection and strengthening to concrete roof slab	Jun-05
Ching Mei Condominiums, Taipei	Taiwan	L&M Systems Inc.	Beam strengthening for flexure and shear	Sep-95
General Instruments Factory	Taiwan	Martin & Huang	Columns repaired and strengthened for shear due to earthquake damage	Oct-99
Formosa Cement Silo	Taiwan	L&M System, Inc.	Seismic strengthening of silo due to under-design	Dec-99

### **List of installations for the TYFO<sup>®</sup> FIBRWRAP<sup>®</sup> Systems (USA, Canada and Mexico)**

<b><u>Project</u></b>	<b><u>Location</u></b>	<b><u>Element</u></b>	<b><u>Type of Application</u></b>	<b><u>Installation</u></b>
Caltrans 07-115994 I-5 & Hwy 2 Los Angeles	SB I-5 to EB Hwy 2	12 Columns (6' dia.)	Seismic	Sep-91
Caltrans 07-115994 I-5 & Hwy 2 Los Angeles	NB I-5 to Griffith Park	3 Columns (4' dia.)	Seismic	Oct-91
Caltrans 07-115994 I-5 & Hwy 2 Los Angeles	NB I-5 to WB Hwy 2 Bents 11 & 12 repaired	Columns	Seismic	Feb-92
Malibu Residence	Malibu, CA	1 Beam (1.3' x 2.5' x 50') 10 Columns (6.28' dia.)	Corrosion Repair	Jun-92
Caltrans Hwy 05-377704	101North Santa Barbara	2 Columns (5' dia.)	Seismic	Jul-92
Sparks	I-80 at Nugget Hotel	96 Columns (3' dia.) Plastic Hinge Zone	Seismic	Jan-93
Wisconsin	I-94 at Rte 12/18 Madison	2 Columns (2.5' dia.)	Repair	Jul-93
Pennsylvania Lakawanna County	Scranton I-84 over Roaring Brook	6 Columns (5' dia.)	Seismic/Repair Corrosion Control	Jul-93
Fort Lewis Army Base	Corps of Engineers Washington State	8 Columns (2.5' dia.)	Seismic/Repair Corrosion Control	Aug-93

Fort Lewis Army Base	Corps of Engineers Washington State	2 Tanks (60' dia.) 8 Columns (2.5' dia.)	Seismic/Repair Corrosion Control	Aug-93
Wisconsin	I-90 at Church St. Madison	6 Columns (2.5' dia.)	Repair	Oct-93
Nikko Hotel	Beverly Hills, CA	34 Rectangular Columns	Seismic	Oct-93
City of Santa Monica	Garage #5 Santa Monica	1 Rectangular Column	Seismic Repair	Jan-94
City of Los Angeles	Pico/Overland Parking Garage	140 Rectangular Columns (some tapered)	Seismic Repair	Feb-94
SWTSU Bobcat Stadium	San Marcos, Texas	4 Light Pole Foundations	Repair/Strengthening	Mar-94
City of Santa Monica	Garage #2	4 Rectangular Columns	Seismic Repair	Mar-94
City of Los Angeles (Condominiums)	15130 Dickens St. Santa Monica, CA	17"-18" Dia. Columns in Garage; Tyfo U Finish	Seismic Repair	Apr-94
I-635 Dallas & Marsh Lane	Dallas, Texas	30" Dia. Circular Column Repair	Impact Repair	Apr-94
City of New York	FDR Drive near Manhattan Bridge	2 Columns (2' x 4')	Corrosion Repair	May-94
Vermont DOT	Bridge #60 South Bent	3 Columns (3' dia.) 17.5 ft. tall	Corrosion Repair	Jun-94
City of Los Angeles	1735 Kinzie Street Northridge, CA	2 Columns (18" dia.) 8.5 ft. tall	Seismic Repair	Jun-94
City of Santa Clarita	Sierra Plaza Parking (under plaza)	20 Columns (12" x 16") 8 ft. tall	Seismic Repair	Jul-94
City of Los Angeles	Valley Star Apartments	24 Columns (16" dia.) 6.7 ft. tall	Seismic Repair	Jul-94
City of Los Angeles	Kaiser Permanente Parking Garage	140 Columns/Corbels 24" x 24" x 11 ft. tall 1" gap between column & beam	Seismic Repair	Aug-94
Wisconsin DOT	I-90 over Route 14E at Janesville	10 Columns (30" dia.) 15 ft. tall	Corrosion Repair	Aug-94
State University Long Beach	McIntosh Humanities Building	4 Columns (2' x 2') 16 ft. tall	Seismic Repair	Aug-94
Bridge to Raft Island	One Wooden Pile with special Tyfo® SW (under water epoxy)	1 Wooden Pile (12" dia.) 40 ft. tall. Wrapped from mud line up to 8 ft.	Wood Corrosion	Aug-94
Poplar Street	East St. Louis, Illinois	1 Column (4' dia.)	Flexural test of actual bridge column	Sep-94
Railroad Bridge	I-90 City of Buffalo Exit 52	2 Columns (3.5' dia.)	Corrosion Repair	Oct-94
Ward's Plaza Parking Structure	18th & La Cienega West Los Angeles, California	167 Circular Columns (2' dia. x 8' tall)	Seismic Repair	Oct-94

Harris Hospital Parking Garage	Fort Worth, Texas	15 Columns for new Heliport Addition	Strengthen for Additional Loading	Nov-94
Fashion Square	Sherman Oaks, CA	Two 24" x 24" x 8' Rectangular Columns	Seismic	Nov-94
I-37 & New Braunfels	San Antonio, Texas	One Column (30" dia.) 9' tall	Provide Ductility	Jan-95
Elm St.	City of Beverly Hills, California	Three 12" x 24" x 5' Rectangular Columns	Seismic Fire Protection	Mar-95
Embassy Suites	Canyon Del Rey Seaside, CA	28 - 30" x 36" x 14.5' Rectangular Columns New Construction	Seismic Fire Protection	Apr-95
I-635 Marsh	Dallas, TX	Columns	Column Wrap	Apr-95
Malibu Residence	Malibu, CA	6 Circular Columns (12-18" dia., 6-9' tall)	Seismic Corrosion	Apr-95
Malibu Residence	Malibu, CA	4 Circular Columns 24" dia. by 12' 2 Circular Columns 18" dia. by 12'	Seismic Corrosion	Apr-95
Lindberg Ave. Traffic Light	St. Louis, MO	Light Pole Foundation Conical Shape	Structural Repair	May-95
Ridgley Residence	Malibu, CA	4 Circular Columns 24" dia. by 12'	Seismic Corrosion	May-95
I-276 over Old York Rd.	Philadelphia, PA	One Rectangular Col.	Impact Repair	Jun-95
Calais Bldgs. I & II	Anchorage, AK	164 Columns 28" x 28"	Seismic Upgrade	Jun-95
Webster Parking Structure	Sherbrooke, Quebec	Beams & Columns	Strengthening	Jun-95
Webster Parking Structure	Sherbrooke, Quebec	Beams & Columns	Strengthening	Jun-95
Pont Clement	Montreal, Quebec	Columns	Repair/Strengthening	Jun-95
Champlain Bridge	Montreal, Quebec	Beams	Repair/Strengthening	Jun-95
Refinery Chimney Stacks	Texas	4 Chimney Stacks	Repair/Strengthening	Jun-95
Arizona Pipe Lining	Arizona	Large Diameter Pipe Lining	Strengthening Interior	Jun-95
Agway Feedmill	Guilderland, NY	10 Beams (352 LF)	Non-Seismic	Jul-95
North 21st Bridge	Tacoma, WA	8 Columns (40' tall) (4' x 4' or 4' x 7.5') 8 Pedestals	Seismic Historic Finish	Jul-95
SDSU Parking Structure #2	San Diego, CA	67 Rectangular Columns (with conduits, cables, etc)	Seismic	Aug-95
Mannette Bridge	Kitsap County, Washington	2'-6" x 6' Pier Caps Four 23' long Four 27"-10" long	Seismic	Sep-95
Pacific Business Center Parkade	Richmond, B.C.	Beams-Columns Joints	Repair	Sep-95
Ultramar Refinery Fluid Catalytic Cracking Unit	Los Angeles, CA	Pier Caps/2 Columns	Seismic/Fire Protection	Sep-95
Ultramar Refinery	Los Angeles, CA	Two 3-Column-Beam Frame Pipe Supports	Seismic/Fire Protection	Sep-95
Pacific Business Center Parkade	Richmond, B.C.	Beam-Column Joints	Repair	Sep-95
Ultramar Refinery Fluid Catalytic Cracking Unit	Los Angeles, CA	2 Columns / Pier Caps	Seismic/Fire Protection	Sep-95
Ultramar Refinery	Los Angeles, CA	Two 3-Column-Beam Frame Pipe Supports	Seismic/Fire Protection	Sep-95
Texaco Refinery	Los Angeles, CA	7 Beams & Beam / Column Connections & 4 Columns	Seismic/Fire Protection	Oct-95
Granville Street Bridge	Vancouver, B.C.	6 Column (7' x 6') over 9' hinge region	Seismic	Oct-95

Snowsheds	Revelstoke, B.C.	3 Columns	Corrosion Repair	Oct-95
Confederation Realty Garage	Toronto, Ontario	3 Columns 1 Wall	Non-Seismic Corrosion Repair	Oct-95
I-70 Topeka Ave.	Topeka, Kansas	Columns	Non-Seismic Corrosion Repair	Oct-95
Texaco Refinery	Los Angeles, CA	4 Columns, 7 Beams & Beam / Column Connections	Seismic/Fire Protection	Oct-95
Petro Canada Refinery	Oakville, Ontario	8 Vessel Support Columns	Non-Seismic Structural Repair	Oct-95
Cotzen Residence	Malibu, CA	1 Beam (1.3' x 2.5' x 50') 10 Columns (6.28' dia.)	Corrosion Repair	Nov-95
I-37	San Antonio, TX	Columns	Wrap	Nov-95
Malibu Residence	Malibu, CA	2 Columns	Corrosion Repair	Nov-95
Rte. 29 Bridge over Rapidan River	Ruckersville, VA	15 Columns	Flood Repair	Dec-95
423 Stansbury Parking Garage	Sherman Oaks, CA	8 Columns (12" dia.)	Seismic Repair Fire Protection	Jan-96
Great Western Bank Bldg.	Sherman Oaks, CA	20 Walls (9' x 13') in stairwell & elevator shaft	Seismic Repair Fire Protection	Feb-96
Stanford Univ. Abrams House	Palo Alto, CA	3 interior Columns	Seismic Repair Fire Protection	Feb-96
Centinela Hospital	Inglewood, CA	44 Columns 8 Walls	Seismic Repair Fire Protection	Mar-96
Capitol Manor	Salem, Oregon	15 Columns 24" X 24"	Seismic	Mar-96
SWTSU Stadium Lights	San Marcos, TX	Stadium Light Pedestals	Base Wrap	Mar-96
UCLA Powell Library	Pasadena, CA	16 Columns	Seismic Repair	Mar-96
Route 571 Garden State Parkway	Ocean County, NJ	6 Bearing Pedestals	Strengthening	Apr-96
Powell Library	UCLA	16 Columns	Seismic	May-96
St. Joseph's Church	Guam	Walls on Dome	Seismic	May-96
Leslie Street	Toronto, Ontario	Pier Caps	Corrosion	Jun-96
Hydro Poles	Indiana	2 Concrete Power Poles	Crack Repair/ Strengthening	Jun-96
Spring Apartments	Los Angeles, CA	39 Columns	Seismic	Jun-96
S.F. State University Parking Structure	San Francisco, CA	276 Columns 408 Cold Joints (SCH-41 Carbon)	Seismic	Jun-96
Stanford Univ. Abrams House	Stanford, CA	26 Columns	Seismic	Jun-96
Northgate Apartments	Los Angeles	6 Columns	Seismic	Jun-96
Wisconsin	Wisconsin	Columns	Corrosion Repair	Jun-96
Civic Auditorium	City of San Gabriel, CA	Large Wall	Impact Protection	Jun-96
Hydro Poles	Indiana	2 Concrete Power Poles	Crack Repair/Strengthening	Jun-96
Houston Intercontinental Airport	Houston, TX	2 Beams	Increase Axial Load Capacity	Jul-96
Clock Tower	Singapore	Tower	Repair	Jul-96
Stanford Univ. Escondido Village, 4 Apt. Bldgs.	Stanford, CA	104 Columns	Seismic	Jul-96
I-10 & San Jacinto River	Houston, TX	5 Columns	Provide Ductility	Jul-96
Bloomingdales	Los Angeles	48 Columns	Seismic Upgrade	Jul-96
S.D.S.U. Parking Garage #1	San Diego, CA	2 Columns	Seismic	Jul-96
Old County Court House (phase-1)	Redwood City, CA	4 Floors of Beam/Wall Connections	Seismic	Aug-96
631 Cliff Dr.	Laguna, CA	2 Prestressed I-Beams (carbon/glass hybrid)	Flexural/Shear Strengthening	Aug-96
Chevron Parking Garage 45 VTPC Bldg.	Richmond, CA	Slab Strengthening 4 Floors	Seismic	Aug-96

Plaza Parking Garage	Olympia, WA	420 Columns	Seismic Upgrade	Sep-96
Davis High School	Davis, CA	14 Columns	Seismic Fire Protection	Sep-96
Washoe Medical Center	Reno, NV	2 Columns	Seismic Upgrade	Sep-96
Pembrook	Concord, NH	8 Columns	Structural Repair	Oct-96
Beaumont 69	Beaumont, TX	Columns	Column Wrap	Oct-96
Hilton	Pasadena, CA	Beams /Columns/Walls	Seismic Retrofit	Oct-96
I-85 Bus Overpass	Spartanburg, SC	Exterior Beam of Deck	Impact Repair/Strengthening	Nov-96
UPS Tilt-Up Bldg.	Van Nuys, CA	48 Columns	Seismic Upgrade	Nov-96
Kaiser Medical Center	Los Angeles, CA	2 Columns	Seismic Upgrade	Nov-96
Bohannon Development	San Francisco, CA	8 Columns	Seismic Shear Strengthening	Nov-96
Wilson 4-Unit Apartments	Pasadena, CA	Slabs	Seismic Repair	Nov-96
Southwestern Public Service	Amarillo, TX 45th Substation	Transmission Pole	Strengthening	Nov-96
TU Electric	Waco, TX	Wood Bridge	Wrap	Nov-96
Cainhoy Road	North Charleston	10 Wood Piers/ slab (SCH-41 carbon)	Strengthening for AASHTO Upgrade	Dec-96
Timber Creek Overpass	Bellmawr, NJ	1 Column (24" dia.)	Structural Repair	Dec-96
Beale Street Restaurant	San Francisco, CA	2 Columns	Seismic Upgrade	Dec-96
Cainhoy Road	North Charleston, SC	Slabs/10 Wood Piers (SCH-41 carbon)	Strengthening for AASHTO Upgrade	Dec-96
Cainhoy Road	North Charleston, SC	10 Wood Piers/Slab (SCH-41 carbon)	Strengthening for AASHTO Upgrade	Dec-96
TU Electric	Lake Creek Substation, TX	7 Wooden Columns (glass/carbon in water)	Strengthen/Rot Repair	Dec-96
San Fernando Courthouse	San Fernando, CA	10 Columns	Seismic Repair	Jan-97
US Highway 69	Beaumont, TX	4 Columns	Provide Ductility	Jan-97
I-5 Overpass Column	Kansas City, Kansas	1 Column (20' tall)	Impact Repair	Jan-97
Kaiser Hospital Parking Structure	Martinez, CA	144 Circular Columns	Seismic Upgrade	Mar-97
Marathon Oil Parking Structure	Houston, TX	Parking Structure	Repair/Wrap	Mar-97
Arroyo Quemado	Los Angeles	12 Columns	Seismic Strengthening	Mar-97
Georgia Pier Cap	Dalton, GA	2 Pier Caps (SCH-41 carbon)	Seismic Strengthening	Apr-97
UCLA Harbor Hospital	Los Angeles, CA	Columns	Seismic Retrofit	Apr-97
Water Pipe Repairs	Arizona	2 Pipe Sections	Repair	Apr-97
Amtrak Chimney Repair	New York, NY	Concrete Smokestack	Structural Repair	Apr-97
Kaiser Hospital Parking Structure	Walnut Creek, CA	85 Rectangular Columns	Seismic Upgrade	Jun-97
Broxton Parking Structure	Los Angeles, CA	Four Columns	Seismic Upgrade	Jun-97
Irvine Towers	Irvine, CA	Columns	Seismic Retrofit	Jun-97
Bloor St. Viaduct	Toronto, Ontario, Canada	Concrete Beams	Non-Seismic Repair	Jul-97
St. Rose Hospital	Hayward, CA	84 ft. Beam	Strengthening	Jul-97
Calcomp	Los Angeles, CA	Columns	Seismic Retrofit	Jul-97
SGI Building	Santa Monica, CA	Eight Columns	Seismic Strengthening	Jul-97
Concrete Pile Rehabilitation	Long Island, NY	Several Piles along Railroad	Non-Seismic Repair	Jul-97
Cal State Univ. Los Angeles	Los Angeles, CA	12 Columns	Seismic Upgrade	Jul-97
PRC Properties	Los Angeles, CA	23 Columns	Strengthening	Jul-97

Keswick Apts.	Overpark, CA	76 Columns	Seismic Upgrade	Jul-97
Kaiser Hospital Parking Structure	So. San Francisco, CA	12 Columns	Seismic Upgrade	Jul-97
S.F. Civic Center	San Francisco, CA	Hollow Clay Tile Walls	Stabilization	Jul-97
Fox Plaza	San Francisco, CA	Multiple Slab Balconies	Corrosion Repair	Jul-97
Alamo Quarry Mall	San Antonio, TX	3 Chimneys	Wrap	Jul-97
Thousand Oaks Civic Center	Thousand Oaks, CA	16 Beam/Column Connections	Seismic Strengthening	Aug-97
McGee Beach	Corpus Christi, TX	Beams	Wrap	Aug-97
Kaiser Hospital Parking Structure	Oakland, CA	Columns	Seismic Retrofit	Aug-97
U.C. Santa Barbara	Santa Barbara, CA	Columns	Seismic Retrofit	Aug-97
Thousand Oaks Civic Center	Thousand Oaks, CA	16 Column/Beam Connections	Seismic Strengthening	Aug-97
Park 'n Store Column Rehab	Houston, TX	Column Rehabilitation	Strengthen From Overload	Aug-97
Christ Church Cathedral	Victoria, B.C.	URM Vaulted Ceiling	Seismic Strengthening	Aug-97
Mason Hanger Centrifuge	Amarillo, TX	Centrifuge (Elliptical Wall)	Reinforce Against Blast	Aug-97
Arizona Pipe Test	Arizona	PCCP	Pipe Test	Aug-97
Mason Hanger Centrifuge	Amarillo, TX	Centrifuge (Elliptical Wall)	Reinforce Against Blast	Aug-97
U.C. Riverside	Riverside, CA	Columns	Seismic Retrofit	Aug-97
I-610 & 225	Houston, TX	Beams & Columns	Wrap	Sep-97
Rte. 116 over Felky Slough	Illinois DOT	16 Columns	Strengthening	Sep-97
I-610 & 225	Houston, TX	Columns & Beams	Wrap	Sep-97
Franklin Bldg.	Oakland, CA	Hollow Clay Tile Walls	Stabilization	Sep-97
East Police Station	Seattle, WA	Walls	Strengthening	Sep-97
Rexene Chemical	Odessa, TX	Blast Mitigation	Strengthening Control Building	Sep-97
Arizona Pipe Lining	Arizona	Pipe Lining	Strengthening Interior	Sep-97
Rexene Chemical	Odessa, TX	Blast Mitigation	Strengthening Control Building	Sep-97
Asheville Legal Building	Asheville, NC	Concrete Floor Beam Repair	Non-Seismic Repair	Oct-97
Oklahoma Medical Center	Oklahoma City, OK	Parking Garage Beam & Column	Strengthening	Oct-97
Akron Arch Bridge	Akron, Ohio	One Arch & 4 Columns	Strengthening	Oct-97
Archer Avenue	Willow Springs, IL	20.3 Sq. Meters Concrete Columns	Non-Seismic Repair	Oct-97
I-40 Harpeath River	Cheatham County, Tennessee	4 Concrete Columns	Non-Seismic Repair	Oct-97
Off Route 250 N.E. between Gayton & 621	Richmond, VA	1 Concrete Column	Structural Repair	Oct-97
Oklahoma Medical Center	Oklahoma City, OK	Parking Garage Column & Beam	Strengthening	Oct-97
Del Monte Parking Structure	Del Monte, CA	Columns & Walls	Strengthening	Oct-97
I-69 Overpass	Fort Wayne, IN	16 Columns & 2 Conc. Crash Walls	Strengthening	Oct-97
Laurel Plaza Robinson May	Los Angeles, CA	Columns	Seismic Retrofit	Oct-97
Del Monte Parking Structure	Del Monte, CA	Columns & Walls	Strengthening	Oct-97
I-69 Overpass	Fort Wayne, IN	2 Conc. Crash Walls & 16 Columns	Strengthening	Oct-97
U.S. Navy Pier 12	San Diego, CA	Pier slabs	Strengthening	Oct-97
American Tennis Court	San Antonio TX	Slabs	Reinforcement	Oct-97



Arizona Pipe Lining	Arizona	Pipe Lining	Strengthening Interior	Oct-97
Rhode Island Pipe Repair	Rhode Island	Large Diameter Pipe Lining	Pipe Strengthening	Oct-97
Stanford Condo	Stanford, CA	Columns	Seismic Strengthening	Oct-97
Compaq Tram Way	Houston, TX	Beams & Columns	Wrap	Nov-97
Church	San Antonio, TX	Beams	Reinforcement of Rotten Beams	Nov-97
Concrete Arch Bridge	Summit County, NJ	1,000 Sq. Ft. of Beams & Columns	Non-Seismic Repair	Nov-97
Rte. 64 West of Rte. 59	Dupage Co. IL	10 Concrete Columns (3,196 square feet)	Non-Seismic Repair	Nov-97
Kemper Road Bridge	Hamilton Co., OH	10 Columns	Non-Seismic Repair	Nov-97
Compaq Tram Way	Houston, TX	Columns & Beams	Wrap	Nov-97
Concrete Arch Bridge	Summit County, NJ	1,000 Sq. Ft. of Columns & Beams	Non-Seismic Repair	Nov-97
Akron Sewer Rehabilitation	Akron, OH	Masonry Pier	Non-Seismic Repair	Nov-97
Jefferson Place	Menlo Park CA	Slab	Sheer Diaphragm	Nov-97
Church	San Antonio, TX	Wooden Beams	Reinforcement of Rotten Beams	Nov-97
Kennedy Parking Garage	Tampa, FL	5 Concrete Beams	Non-Seismic Repair	Dec-97
HEB Grocery	San Antonio, TX	Beams	Reinforcement	Dec-97
Big Foot Overpass	East Hartford, CT	4 Concrete Columns	Non-Seismic Repair	Dec-97
Saks Shopping Centre	Santa Barbara, CA	Columns	Strengthening	Dec-97
Kaiser Hospital Santa Rosa	Santa Rosa, CA	60 Columns	Seismic Retrofit	Dec-97
Malibu Residence	Malibu, CA	Four Columns	Strengthening	Dec-97
Southwestern Public Service	Amarillo, TX	Utility Pole	Wrap	Dec-97
City of Houston	Houston, TX	Beams	Strengthening	Jan-98
Cracker Platform	Equatorial Guinea	30 Columns	Strengthening	Jan-98
Malibu Residence	Malibu, CA	Columns	Strengthening	Jan-98
Radisson Hotel	Austin, TX	Parking Garage Columns	Wrap	Jan-98
J.C. Penny	Santa Clarita, CA	Panel Repair	Non-Structural Repair	Jan-98
American Airlines	Dallas, TX	26 Columns	Wrap for Strengthening	Feb-98
Port of Houston	Houston, TX	Column Wrap	Beam Support for Crane	Feb-98
Fort Sam Houston	San Antonio, TX	Walls	Reinforcement	Feb-98
601 Pine St.	Seattle, WA	Beams & Slabs	Strengthening	Mar-98
City Terrace Park	Los Angeles	Columns & Slabs	Seismic Retrofit	Mar-98
Wesley Terrace	Seattle, WA	Walls	Strengthening	Mar-98
601 Pine St.	Seattle, WA	Beams & Slabs	Strengthening	Mar-98
City Terrace Park	Los Angeles	Columns & Slabs	Seismic Retrofit	Mar-98
Arizona Pipe Lining	Arizona	Large Diameter Pipe Lining	Strengthening Interior Repair	Mar-98
Lanterman St.	Pomona, CA	Historic columns	Strengthening	Apr-98
Irvine Towers Mock-up	Irvine, CA	Columns	Seismic Retrofit	Apr-98
Del Amo Financial	Del Amo, CA	20 Columns	Seismic Retrofit	Apr-98
Blue Sea Lodge	Pacific Beach, CA	6 Columns	Strengthening	Apr-98
Salt Lake City Roasting Co.	Salt Lake City, UT	URM Wall	In-Plane Shear Strengthening	Apr-98
Interstate Rte. 71	Cincinnati, OH	18 Columns (3 ft. dia.)	Non-Seismic Repair	May-98
Irvine Towers 500 & 550	Irvine, CA	Columns	Seismic Retrofit	May-98
Newport Center Drive	Los Angeles, CA	Columns	Seismic Retrofit	May-98

Santa Barbara Airport Plaza	Santa Barbara, CA	20 Columns	Seismic Retrofit	May-98
San Mateo Courthouse	San Mateo, CA	Wall & Shear Connections	Seismic Retrofit	May-98
PS #1 Elementary	California	Columns	Seismic Retrofit	Jun-98
Robinson May Santa Ana	Santa Ana, CA	Columns	Seismic Retrofit	Jun-98
Four Points Hotel	Santa Monica, CA	15 Rectangular Columns 24" x 24"	Strengthening	Jun-98
USC Student Union Building	Los Angeles, CA	10 Columns	Seismic Retrofit	Jun-98
Golden Gateway Center	San Francisco, CA	Walls	Seismic Retrofit	Jun-98
Mormon Temple Oakland	Oakland, CA	Beams	Strengthening	Jul-98
Bay View Towers	San Mateo, CA	Shear Walls	Seismic Retrofit	Jul-98
K-Mart	Los Angeles	Columns & Walls	Strengthening	Aug-98
Transbay Terminal	San Francisco, CA	4 Columns & 3 Walls	Seismic Retrofit	Aug-98
City of Fremont Jail Facility	Fremont, CA	8 Columns	Seismic Retrofit	Aug-98
K-Mart	Los Angeles	Walls & Columns	Strengthening	Aug-98
Transbay Terminal	San Francisco, CA	3 Walls & 4 Columns	Seismic Retrofit	Aug-98
Sandy Fire Station	Salt Lake City, UT	16 Slab Joints	Seismic Upgrade	Aug-98
U.S. Navy Pier 12	San Diego, CA	Slabs	Strengthening	Aug-98
Kaiser Hospital Riverside	Riverside, CA	Columns	Seismic Retrofit	Sep-98
Arizona Pipe Lining	Arizona	Large Diameter Pipe Lining	Strengthening Interior	Sep-98
Lee Library	Provo, UT	Beam/Slab Connection	Strengthening of Positive Moment Reinforcing	Nov-98
Malibu Cove	Malibu, CA	Columns	Strengthening	Nov-98
Hermosa Beach Pier	Hermosa Beach, CA	27 Pier Piles	Strengthening	Nov-98
Fremont Jail	Fremont, CA	6 Columns	Seismic Retrofit	Nov-98
SDG&E Vault Main St.	Chula Vista, CA	Wall/Conc. Slab	Concrete Repair/ Strengthening	Nov-98
Lee Library	Provo, UT	Slab Connections/Beams	Strengthening of Positive Moment Reinforcing	Nov-98
SDG&E Vault Main St.	Chula Vista, CA	Conc. Slabs & Walls	Strengthening	Nov-98
Hill Canyon Pipe	Thousand Oaks, CA	One Pipe Segment	Pipe Repair	Nov-98
7375 Chapman	Los Angeles, CA	Walls	Strengthening	Dec-98
Kimpton Hotel	Salt Lake City, UT	Flat Plate Slabs	Strengthening of Moment Capacity	Dec-98
Building	Salt Lake City, UT	Flat Plate Slabs	Redevelopment of Cut Reinforcing Steel	Dec-98
Sares-Regis Cooling Tower		Support Beams	Seismic Strengthening	Jan-99
CSU Monterey Bay	Monterey, CA	Beam/Column Shear Connections	Seismic Retrofit	Jan-99
Malibu Residence	Malibu, CA	Columns/Beams	Strengthening	Jan-99
Amherst Apts.	Sacramento, CA	Columns & Walls	Seismic Retrofit	Jan-99
Amherst Apts.		Columns & Walls	Seismic Retrofit	Jan-99
Calvary Christian H.S.	Canoga Park, CA	4 Columns	Seismic Retrofit	Feb-99
SU Monterey Bay	Monterey, CA	Columns/Beams Shear Connections	Seismic Retrofit	Mar-99
Temple Hospital	Los Angeles, CA	8 Columns	Seismic Retrofit	Mar-99
Arizona Pipe Lining	Arizona	Pipe Lining	Pipe Strengthening	Mar-99

211 Yacht Club Way	Redondo Beach, CA	Beams/Slabs/Columns	Concrete Repair/Strengthening	Apr-99
Malibu Residence	Malibu, CA	Columns	Strengthening	Apr-99
211 Yacht Club Way	Redondo Beach, CA	Slabs/Beams/Columns	Concrete Repair/Strengthening	Apr-99
Santa Barbara City College	Santa Barbara, CA	Concrete Slabs (BC System)	Shear Transfer	Apr-99
Ventura Mall	Ventura, CA	Beams	Shear and Flexural Strengthening	May-99
Savannah Desoto Office	Savannah, GA	Beams	Strengthening	May-99
Malibu Pier	Malibu, CA	Pile Wrap	Strengthening/ Confinement	May-99
Malibu Residence	Malibu, CA	Columns	Strengthening	May-99
San Francisco Film Institute	San Francisco, CA	Columns/Walls	Seismic Retrofit	May-99
Emeryville Parking Structure	Emeryville, CA	Columns	Confinement	May-99
CSU Monterey Bay	Monterey, CA	Walls/Slabs (BC System)	Shear Transfer and Seismic Strengthening	May-99
San Francisco Film Institute	San Francisco, CA	Walls & Columns	Seismic Retrofit	May-99
CSU Monterey Bay	Monterey, CA	Slabs/Walls (BC System)	Shear Transfer Seismic Strengthening	May-99
California Pacific Rice Mill	California	Slabs	Strengthening	May-99
Malibu Pier	Malibu, CA	Pile Wrap	Strength/ Confinement	May-99
Hyatt Union Square	San Francisco, CA	Beams	Retrofit	Jun-99
Irvine 500 Bldg.	Irvine, CA	Columns	Seismic Retrofit	Jun-99
USC Troy Hall	Los Angeles, CA	Walls	Seismic Retrofit	Jun-99
Clairmont McKenna College	Clairmont, CA	Slabs & Beams	Strengthening	Jun-99
Milpitas Elementary School	Milpitas, CA	Beams/Column Connection	Seismic Strengthening	Jul-99
Zeneca Building	San Francisco, CA	Beams	Strengthening	Jul-99
Huntley Raddison	Santa Monica, CA	Beams & Walls	Seismic Retrofit	Jul-99
Edgewood Shopping Center	Los Angeles, CA	Columns	Strengthening (Tyfo 2 System)	Jul-99
Milpitas Elementary School	Milpitas, CA	Column Connection/Beam	Strengthening	Jul-99
Rancho Milpitas School	Milpitas, CA	Columns	Seismic Retrofit	Jul-99
Young Building Camosun College	Victoria, B.C.	HCT Walls	Seismic In-Plane Retrofit	Jul-99
College Avenue	Berkeley, CA	HCT Walls	Seismic Retrofit	Jul-99
Huntley-Radisson	Santa Monica, CA	Walls & Beams	Seismic Retrofit	Jul-99
Saint Joseph Hospital	Burbank, CA	Beams	Seismic Retrofit	Aug-99
Queen Parking Garage	Ottawa, Ontario	Columns	Corrosion Protection	Aug-99
Cupertino City Center	Cupertino, CA	Columns	Seismic Retrofit	Aug-99
Rainbow Bridge	USA/Canada Border	Beams	Shear	Sep-99
San Francisco Residence	San Francisco, CA	Beams	Strengthening	Sep-99
Guildford-Davis	Maryland	6 Beams	Shear Strengthening	Sep-99
1212 Broadway	Oakland, CA	HCT Walls	Stabilization	Sep-99
Mann School	San Diego, CA	Slabs	Strengthening	Sep-99
Dodger Stadium	Los Angeles, CA	Columns	Seismic Retrofit	Oct-99
Janie Lai	Thousand Oaks, CA	Walls	Strengthening	Oct-99
CMS Nomeco	Africa	Columns	Strengthening	Nov-99
Malibu Residence	Malibu, CA	Columns	Strengthening	Nov-99
Panasonic	Tijuana, Mexico	Slab	Strengthening	Nov-99

Bode of Peace Apartment Building	Burlington, Ontario	Beams/Columns	Shear Strengthening	Dec-99
Trammel Crow 2447 PCH	Hermosa Beach, CA	Columns	Seismic Retrofit	Dec-99
Bode of Peace Apartment Building	Burlington, Ontario	Columns/Beams	Shear Strengthening	Dec-99
Irvington Beam Repair	Oregon	Beams	Flexural	Jan-00
Arroyo Seco Bridge	Pasadena, CA	Columns	Seismic Retrofit	Jan-00
Delaware Dept. of Transportation	Delaware	1 Column	Corrosion Protection	Jan-00
UCSD Basic Science Bldg.	San Diego, CA	16 Columns	Seismic Retrofit	Jan-00
UCSB Biology Bldg.	Santa Barbara, CA	8 Columns	Seismic Retrofit	Jan-00
Calleguas MWD	Calleguas, CA	PCCP Pipe	Structural Repair	Jan-00
Presidio Building	San Francisco, CA	Columns & URM Walls	Seismic Retrofit	Feb-00
Cal State Long Beach	Long Beach, CA	6 Columns	Seismic Retrofit	Feb-00
Long Beach City College	Long Beach, CA	7 Steel Braces	Seismic	Feb-00
Presidio Building	Presidio Building	URM Walls & Columns	Seismic	Feb-00
Monterey Beach Hotel	Monterey, CA	Slabs	Structural Repair	Feb-00
Riconda Water Treatment	Santa Clara, CA	4 Beams	Seismic	Mar-00
Dodger Stadium	Los Angeles, CA	72 Columns	Seismic Retrofit	Mar-00
Malibu Inn	Malibu, CA	3 Columns	Seismic Retrofit	Mar-00
Madison Power Stack	Madison, WI	1 Stack	Strengthening	Mar-00
Route 9	Albany, NY	Piers	Seismic Retrofit	Apr-00
The Palms Hotel	Reno, CA	Columns & Walls	Seismic Retrofit	Apr-00
Ghiardelli Woolen Mill	San Francisco, CA	URM Walls	Seismic	Apr-00
The Palms Hotel	Reno, CA	Walls & Columns	Seismic	Apr-00
Fashion Island	Newport, CA	URM Walls	Seismic	Apr-00
420 Taylor Street	San Francisco, CA	Columns	Seismic Retrofit	May-00
Wurster Hall	Berkeley, CA	30 Columns & Concrete Walls	Seismic Retrofit	May-00
USC Computer Center	Los Angeles, CA	Columns	Seismic Retrofit	May-00
Port of Long Beach	Long Beach, CA	1 Concrete Pile	Structural Repair	May-00
Renaissance Glass Works	Penn.	CMU Walls	Discontinuous Reinforcement	May-00
Wurster Hall	Berkeley, CA	Concrete Walls & 30 Columns	Seismic	May-00
CCI Newmarker	Ontario, CN	6 Support Columns	Concrete Repair	Jun-00
Fort Belvoir	Maryland	6 Columns	Strengthening	Jun-00
Rte. 17 SCDOT	South Carolina	6 Columns	Concrete Repair System	Jun-00
UC Berkeley Silver Lab	Berkeley, CA	20 Columns	Seismic Retrofit	Jun-00
Bridgepoint Center	San Francisco, CA	15 Columns & Walls	Seismic Retrofi	Jun-00
Bridgepoint Center	San Francisco, CA	16 Columns & Walls	Seismic	Jun-00
D.C. Office Building	Washington D.C.	Slab Hole	Reinforcement	Jun-00
Capon Bridge Middle School	Virginia	9 Beams	Flexural Shear	Jul-00
Malibu Residence	Malibu, CA	1 Concrete Beam & 6 Columns	Structural Repair	Jul-00
Walnut Creek Parking Structure	Walnut Creek, CA	50 Columns	Seismic Retrofit	Jul-00
Orleans Road MDDOT	Maryland	2 Columns	Concrete Repair System	Jul-00

Malibu Residence	Malibu, CA	6 Columns & 1 Concrete Beam	Structural Repair	Jul-00
USC Commons Bldg.	Los Angeles, CA	Columns	Seismic Retrofit	Jul-00
Chicago Chemical	Skokie, IL	Walls	Blast	Jul-00
Santa Paula Wall	Santa Paula, CA	URM Wall	Structural Repair	Jul-00
Chicago Chemical	Skokie, IL	Walls	Blast	Jul-00
Malibu Residence	Malibu, CA	3 Columns	Structural Repair	Aug-00
Akron Thermal	Akron, OH	24 Columns	Confinement	Aug-00
FAI 135 Rte. 64	Illinois	6 Battered Columns	Seismic	Aug-00
Portage Creek	Victoria, B.C., Canada	2 Columns	Seismic Retrofit	Aug-00
Joseph A. Russo Memorial Bridge	New York	Arches	Ductility	Sep-00
Ryerson College	Ontario, CN	42 Columns	Axial Load	Sep-00
Portage Creek Bridge	Victoria, B.C.	2 Columns	Seismic	Sep-00
MTA	Maryland	1 Column	Strengthening	Sep-00
Montgomery County	Ohio	6 Columns	Concrete Repair	Sep-00
Beverly Hills Schools	Beverly Hills, CA	Columns & Walls	Seismic Retrofit	Sep-00
Beverly Hills Schools	Beverly Hills, CA	Columns & Walls	Seismic	Sep-00
Naden Gym/Canada	Victoria, B.C.	CMU Walls	Seismic In-Plane	Sep-00
Searle Chemical Facility	Illinois	CMU Walls	Blast Mitigation	Sep-00
Cala Foods	San Francisco, CA	Slabs	Structural Repair	Sep-00
Steamboat Slab	Steamboat, CO	Slabs	Flexural	Sep-00
Dotasco Coke Line	Ontario, CN	Steel Pipe T-Joint	Strengthening	Sep-00
Chautauqua Lake	New York	Pier Caps	Strengthening	Oct-00
Malibu Colony Cove	Malibu, CA	Beams	Girder Strengthening	Feb-01
Navy Medical Cntr Bldg 26	San Diego	Walls	Wall Reinforcement	Apr-01
Bollman Improvements	Concord, CA	Walls	Strengthening	Jun-01
USC Deuadeux		Columns	Strengthening	Aug-01
Metra Structures		Columns	Retrofit	Sep-01
Sears Lofts	Los Angeles, CA	Slabs	Strengthening	Sep-01
MT Holyoke College		Beams	Strengthening	Nov-01
Auburn Lake Trails		Pile Wrap	Strengthening	Nov-01
La Jolla Galeria	La Jolla, CA	Slabs	Strengthening	Dec-01
Cerritos Library	Cerritos, CA	Beams	Strengthening	Jan-02
McPhearson Library	Victoria, Can	Columns	Column Upgrade	Jan-02
UCLA men's Gym	Los Angeles, CA	Columns	Strengthening	Jan-02
John Wayne Airport	Orange, CA	Columns	Seismic Remediation	Feb-02
450 Newport Center Drive	Newport Beach, CA	Beams & Columns	Seismic Retrofit	Feb-02
Baker Univ.	Santa Monica, CA	Slabs	Strengthening	Feb-02
Palo Alto Parking Struct		Walls	Wall Stabilization	Mar-02
Peter Tork Towers	San Francisco, CA	Slabs	Strengthening	Mar-02
Cecele and Michael Birkrant		Columns & Walls	Seismic Retrofit	Apr-02
ODOT Clark Conty		Columns	Column Jacketing	Apr-02
Imation Foundation	Caramelo, CA	Concrete Repair	Strengthening	Apr-02
New Hampshire		Columns	Strengthening	Apr-02
EI Torito Restaurants	Monterey, CA	Columns	Strengthening	Apr-02
Ebner Building		Walls	Strengthening	Apr-02
Town of Covierville		Walls	Restoration	Apr-02
Bentnall	Vancouver, B.C.	Slabs	Strengthening	Apr-02
Oak Street Bridge	B.C. Canada	Beams	Seismic Retrofit	May-02
UCLA Dance Building	Los Angeles	Beams	Strengthening	Jun-02

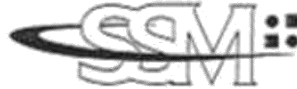
Laurel Bay Apt		Beam	Strengthening	Jun-02
Univ of Mass Lincoln	Mass. MA	Beams	Strengthening	Jun-02
Miche Stadium	New York	Beams	Seismic Retrofit	Jul-02
Cleveland Elementary	Cleveland, OH	Walls	Strengthening	Jul-02
MUSC/Gamma Camera		Slabs	Strengthening	Jul-02
Beaudry	Los Angeles, CA	Slabs	Strengthening	Aug-02
South Bay Office Tower		Walls	Strengthening	Dec-02
Kaiser Woodland Hills	Woodland Hills, CA	Columns	Seismic Retrofit	Jan-03
Allen McCulloch Pipeline	Irvine, CA	PCCP Pipe	Pipe Retrofit	Feb-03
UCLA Broad Arts Center	Westwood, CA	Columns	Seismic Retrofit	Mar-03
San Bernardino Parking Structure	San Bernardino, CA	Columns/Slab/Walls	Seismic Retrofit	Mar-03
San Bernardino, Parking Structure	San Bernardino, CA	Columns/Slab/Walls	Seismic Retrofit	Mar-03
College of the Canyons	Santa Clara, CA	Walls	Seismic Retrofit	Mar-03
945 Green St.	San Francisco, CA	Walls	Seismic Retrofit	Mar-03
Hawaii BEQ	Honolulu, HI	Slabs & Walls	Seismic Retrofit	Mar-03
Hawaii BEQ	Honolulu, HI	Slabs & Walls	Seismic Retrofit	Mar-03
San Bernardino Parking Structure	San Bernardino, CA	Columns/Slab/Walls	Seismic Retrofit	Mar-03
Sacramento River Bridge	Sacramento, CA		Strengthening	Mar-03
Childrens and Womens Hospital	Vancouver, B.C.	Chimney	Strengthening	Mar-03
Miramar Clearwell #2	Miramar, CA	Beams & Columns	Seismic Retrofit	Apr-03
UCSB - San Rafael Student Housing	Santa Barbara, CA	Columns & Walls	Seismic Retrofit	Apr-03
Miramar Clearwell #2	Miramar, CA	Beams & Columns	Seismic Retrofit	Apr-03
UCSB - San Rafael Student Housing	Santa Barbara, CA	Columns & Walls	Seismic Retrofit	Apr-03
Intermountain Pipe	Delta, UT	PCCP Pipe	Pipe Retrofit	Apr-03
Sky Harbor International Airport	Phoenix, AZ	Columns	Blast Hardening	May-03
Piedmont Middle School	Charolette, NC	Columns	Strengthening	Jun-03
Long Beach Public Safety Building	Long Beach, CA	Columns	Seismic Retrofit	Jun-03
LAPD Southwest Station	Los Angeles, CA	Columns & Walls	Seismic Retrofit	Jun-03
LAPD Southwest Station	Los Angeles, CA	Columns & Walls	Seismic Retrofit	Jun-03
Kapahulu Bunk House Fish and Game	Kapahulu, HI	Walls	Strengthening	Jun-03
Redondo Performing Arts	Redondo Beach, CA	Walls	Strengthening	Jun-03
La Jolla Galleria #2	San Diego, CA	Slabs	Strengthening	Jun-03
Marriot Coronado Spa & Resort	Coronado, CA	Slabs	Change of Use	Jun-03
Prospera Credit Union	Vancouver, B.C.	Slabs	Strengthening	Jun-03
Waukegan Pipe	Chicago, IL	PCCP Pipe	Pipe Retrofit	Jun-03
Lions Gate Hospital	Vancouver, B.C.	Chimney	Strengthening	Jun-03
UCLA Kaufman Hall	Westwood, CA	Columns	Seismic Retrofit	Jul-03
Birmingham Pump Station	Kansas CityMO	Walls	Strengthening	Jul-03

Grand Hyatt 3rd Floor	San Diego, CA	Slabs	Change of Use	Jul-03
Civic Center Storage Phase 2	Santa Clara, CA	Slabs	Change of Use	Jul-03
Fox River Paper Mill	Modesto, CA	Columns	Seismic Retrofit	Aug-03
McPherson Library	Vancouver, B.C.	Columns	Strengthening	Aug-03
2040 W. Artesia	Torrance, CA	Injection & Wall	Strengthening	Aug-03
450 Newport Center	Newport Beach, CA	Columns	Seismic Retrofit	Sep-03
Port of Long Beach	LongBeachCA	In-water Pile Repair	Strengthening	Sep-03
Hard Rock Casino	Las Vegas, CA	Columns	Change of Use	Sep-03
San Bernadino Columns	San Bernardino, CA	Columns	Seismic Retrofit	Sep-03
Fort Orde DOD	Monterey, CA	Walls	Seismic Retrofit	Oct-03
3rd Flr - SD Hyatt	San Diego, CA	Slabs	Change of Use	Oct-03
China Basin	San Francisco, CA	Slabs	Strengthening	Oct-03
LA Police Dept, #1546 MLK	Los Angeles, CA	Columns & Walls	Seismic Retrofit	Nov-03
Guam- Anderson Air Force Base	Guam	Columns	Strengthening	Nov-03
LA Police Dept	Los Angeles, CA	Columns & Walls	Seismic Retrofit	Nov-03
Haw River Bridge	North Carolina	Columns	Strengthening	Nov-03
120 S. Atlantic	Monterey Park, CA	Beam & Pile Repair	Strengthening	Dec-03
Frank Douglas	Malibu, CA	Beams & Columns	Strengthening	Dec-03
BEQ-43700 Camp Pendelton	Camp Pendelton, CA	Columns	Seismic Retrofit	Dec-03
ANC Rental Corp (Alamo)	Los Angeles, CA	Beams/Columns/Slabs	Change of Use	Dec-03
Haggerty Hall	Columbus, Ohio	Columns	Strengthening	Dec-03
Santa Monica Parking Structure	Santa Monica, CA	Columns	Seismic Retrofit	Dec-03
San Bernardino Valley College	San Bernardino, CA	Columns	Seismic Retrofit	Dec-03
27024 Malibu	Malibu, CA	Columns	Strengthening	Dec-03
11770 PCH	Malibu, CA	Pile & Beam Repair	Strengthening	Dec-03
US Fish & Wildlife	San Francisco, CA	Wood Piles	Seismic Retrofit	Dec-03
23950 Malibu Rd.	Malibu, CA	Columns	Strengthening	Dec-03
Ruben Salazar Bldg. Sonoma St.	Sonoma, CA	Columns & Walls	Seismic Retrofit	Dec-03
Las Virgenes Pumphouse	Westlake, CA	Beams	Strengthening	Dec-03
Frank Douglas	Malibu, CA	Beams & Columns	Strengthening	Dec-03
ANC Rental Corp (Alamo)	Los Angeles, CA	Beams/Columns/Slabs	Strengthening	Dec-03
120 S. Atlantic	Monterey Park, CA	Beam & Pile Repair	Strengthening	Dec-03
Cache Creek Casino	Brooks, CA	Beams	Strengthening	Dec-03
Cal Sutter	San Francisco, CA	Beams	Strengthening	Dec-03
Stroudsburg Parking Garage	Stroudsburg, PN	Beams	Strengthening	Dec-03
Steinhart Aquarium	San Francisco, CA	Beams	Strengthening	Dec-03
11770 PCH	Malibu, CA	Beam & Pile Repair	Strengthening	Dec-03
140 S. Glendor Ave.	Glendora, CA	Walls	Strengthening	Dec-03

Antlers Hotel	Leemore, CA	Walls	Strengthening	Dec-03
DMV Sacramento	Sacramento, CA	Walls	Seismic Retrofit	Dec-03
Ned's Bookstore	Berkeley, CA	Walls	Strengthening	Dec-03
St. Mary's Church	Memphis, TN	Walls	Strengthening	Dec-03
Ruben Salazar Bldg. Sonoma St.	Sonoma, CA	Columns & Walls	Seismic Retrofit	Dec-03
Brattleboro Fire Station	Brattleboro, Vermont	Slabs	Strengthening	Dec-03
Imation Phase 2	Oxnard, CA	Slabs	Strengthening	Dec-03
Imperial Palace	Las Vegas, CA	Slabs	Change of Use	Dec-03
St. Helena Hospital	Deer Park, CA	Slabs	Strengthening	Dec-03
ANC Rental Corp (Alamo)	Los Angeles, CA	Beams/Columns/Slabs	Change of Use	Dec-03
Wal Mart La Mesa	La Mesa, CA	Slabs	Change of Use	Dec-03
E.A. Diddle Arena	Bowling Green, KY	Slabs	Strengthening	Dec-03
Santa Clara, Parking Structure	Santa Clara, CA	Slabs	Strengthening	Dec-03
LAX Hilton	Los Angeles, CA	Slab Opening	Change of Use	Dec-03
SD #4 (MWD PCCP)	San Diego, CA	PCCP Pipe	Pipe Retrofit	Dec-03
Capilano Bridge	Vancouver, B.C.		Strengthening	Dec-03
Cosgrave Interchange	Reno, NV	Beams & Columns	Seismic Retrofit	Jan-04
NDOT				
26966 Malibu CC - Mason Res.	Malibu, CA	Columns	Strengthening	Jan-04
26170 PCH Malibu	Malibu, CA	Columns	Strengthening	Jan-04
25205 Malibu Rd.	Malibu, CA	Columns	Strengthening	Jan-04
Malibu pier Phase 3	Malibu, CA	Columns	Strengthening	Jan-04
Kaiser Fontana Prk. Str.	Fontana, CA	Columns	Seismic Retrofit	Jan-04
27102 MCC	Malibu, CA	Columns	Strengthening	Jan-04
Cosgrave Interchange	Reno, NV	Beams & Columns	Seismic Retrofit	Jan-04
NDOT				
13th Street Bridge (VAFB)	Vandenberg Air-Force Base	Beams	Change of Use	Jan-04
Marshall/Washington St		Beams	Strengthening	Jan-04
Casino Royal	Las Vegas, CA	Beams	Change of Use	Jan-04
Miramar Clearwell #1	Miramar, CA	Beams	Seismic Retrofit	Jan-04
Eastend Lofts	Sacramento, CA	Beams & Slabs	Change of Use	Jan-04
Eastend Lofts	Sacramento	Beams & Slabs	Seismic Retrofit	Jan-04
Cosgrave Interchange	Reno, NV	Beams & Columns	Seismic Retrofit	Jan-04
NDOT				
13th Street Bridge (VAFB)	Vandenberg Air-Force Base	Beams	Change of Use	Jan-04
Miramar Clearwell #1	Miramar, CA	Columns	Seismic Retrofit	Mar-04




# **APPENDIX D**



**SURUHANJAYA SYARIKAT MALAYSIA  
COMPANIES COMMISSION OF MALAYSIA**

BORANG 9  
AKTA SYARIKAT, 1965

CERTIFIED TRUE COPY

  
Secretary  
**ENG SHOOI NG CHING**  
MIA 412

Seksyen 16 (4)

No. Syarikat  
**634236 W**

**PERAKUAN PEMERBADANAN SYARIKAT SENDIRIAN**

Adalah diperakui bahawa

**FIBRWRAP CONSTRUCTION (M) SDN. BHD.**

telah diperbadankan di bawah Akta Syarikat, 1965 pada dan mulai  
dari **12** haribulan **November** **2003** dan bahawa syarikat ini  
adalah sebuah syarikat berhad menurut syer dan bahawa syarikat ini adalah  
sebuah syarikat sendirian.

Dibuat di bawah tandatangan dan meterai saya di  
pada **12** haribulan **November** **2003**

**KUALA LUMPUR**



  
**PUTEH BT MAHMOOD**  
PENOLONG PENDAFTAR SYARIKAT  
MALAYSIA



**SURUHANJAYA SYARIKAT MALAYSIA**  
COMPANIES COMMISSION OF MALAYSIA

PENDUA

BORANG 9  
AKTA SYARIKAT 1965

[Seksyen 16(4)]

No. Syarikat - MyCoID

897596	T
--------	---

**PERAKUAN PEMERBADANAN SYARIKAT SENDIRIAN**

Dengan ini diperakui bahawa

**INSITUFORM LININGS ASIA SDN. BHD.**

telah diperbadankan di bawah Akta Syarikat 1965, pada dan mulai dari 07 haribulan April 2010, dan bahawa syarikat ini adalah sebuah syarikat berhad menurut syer dan bahawa syarikat ini adalah sebuah syarikat sendirian.

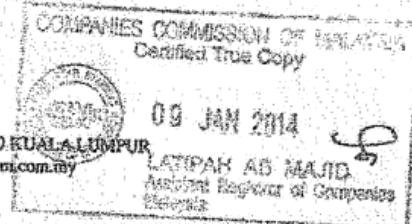
Dibuat di bawah tandatangan dan meterai saya di Kuala Lumpur pada 07 haribulan April 2010.

*[Signature]*  
**AZAHARI BIN AB RAHMAN**  
PENOLONG PENDAFTAR SYARIKAT  
MALAYSIA

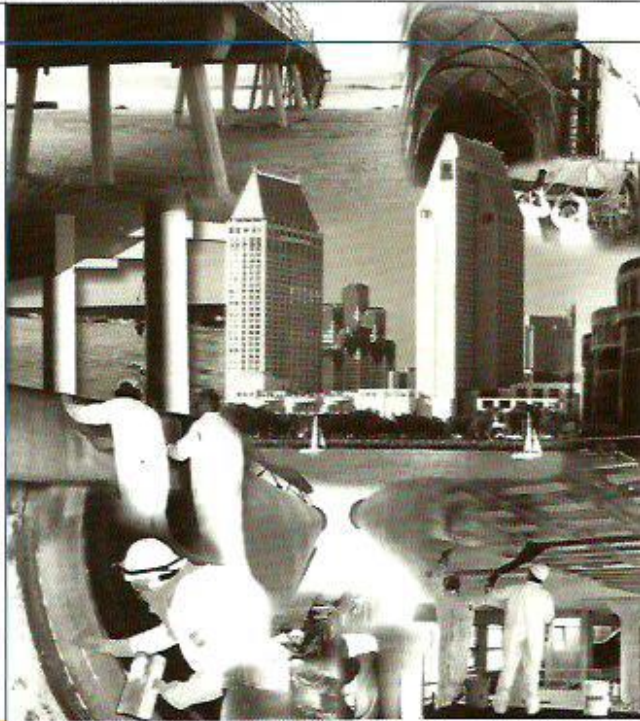
UserID: hayatul

Date: 7/4/2010 4:06:10 PM

MENARA SSM@SENTRAL  
NO. 7, JALAN STESEN SENTRAL 5, KUALA LUMPUR SENTRAL, 50470 KUALA LUMPUR  
TEL: 03-2299 4400 FAKS: 03-2299 4411 EMEL: enquiry@ssm.com.my



# **APPENDIX E**



**Tyfo<sup>®</sup> Fibrwrap<sup>®</sup> Systems**

# Fyfe Company LLC

PROVIDING CREATIVE SOLUTIONS FOR TODAY'S STRUCTURAL PROBLEMS SINCE 1988

## Fyfe Co. LLC

was founded by Edward R. Fyfe to research and develop the use of advanced composite materials for the engineering and construction industries. Since 1988 our patented Tyfo® Fibrwrap® Systems have been used to strengthen over ten thousand structural elements on projects throughout the world. In addition, our Tyfo® Systems have been tested at over fifty universities and private institutions. This research includes full-scale structural testing, long-term durability studies, fire resistance testing and blast mitigation research. Our research and development program is on-going. We are continually developing new materials and techniques to provide the best solutions for reinforcing structures.

Our staff is comprised of engineers, designers, material specialists, material manufacturers, and in-field technicians. Fyfe Company places an emphasis on Quality Assurance. This extends from the manufacturing of our materials, through our engineering staff, as well as to the actual use and application of our Tyfo® Systems. Our Tyfo® Systems can only be installed by Fyfe Company Trained and Certified Applicators. Our Certified Applicator Program ensures that every project is completed according to Fyfe Company's high quality assurance standards.

Our goal is to provide excellent customer service, the highest quality materials and the most comprehensive technical support in the composite strengthening industry.

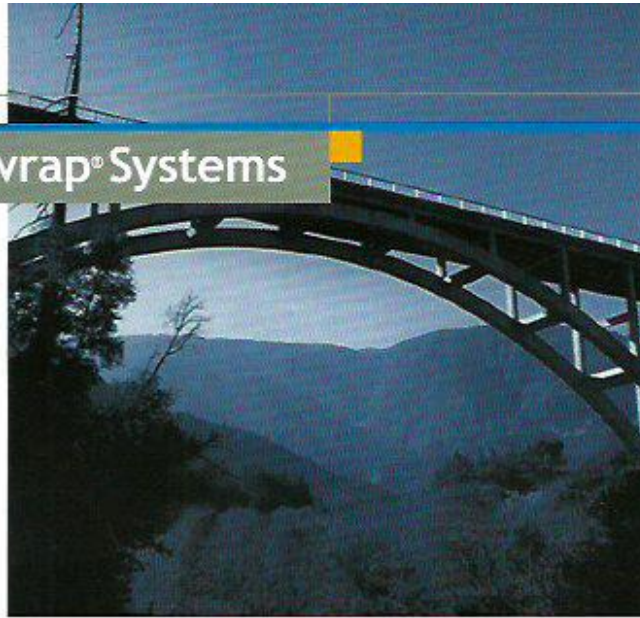


## The Tyfo® Fibrwrap® Systems

### Tyfo® Fibrwrap®

The Tyfo® Fibrwrap® Systems are lightweight, high-strength systems for reinforcing concrete, masonry, steel, and timber structures. Fyfe Company has taken technology used by the aerospace industry for over fifty years and adapted it for civil engineering uses.

The Tyfo® Systems consist of carbon, e-glass and aramid fabrics that are impregnated with high quality resins to form a laminate that is externally bonded to the element to be strengthened.



Tyfo® Fibrwrap® has been rigorously tested to prove its long-term viability. In addition, the Systems have performed as designed during major earthquakes in Los Angeles, El Salvador, Taiwan and Seattle.

Tyfo® Fibrwrap® is applied to the existing element

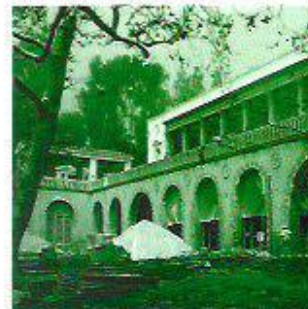
by hand. Due to its lightweight nature and ease of installation, no heavy machinery or major demolition is necessary. This provides for a rapid construction schedule and minimal disruption to an operating facility.

3

## An Introduction to Tyfo® Materials

Fyfe Company offers a wide variety of options for engineers who are incorporating composite reinforcement into their projects. This wide selection of Tyfo® Systems allows for the proper material to be specified depending on the required performance

and type of application. For assistance in determining which Tyfo® System is best suited for a particular use, please refer to the Fyfe Company Design Manual or consult with our engineering staff at no obligation.



# Tyfo® Fibrwrap® Systems



## Tyfo® E-Glass Based Systems

Tyfo® SEH, WEB and BC Systems are comprised of high-grade continuous strand e-glass fabrics that are impregnated with Tyfo® epoxies.

**Tyfo® SEH-51A**, the most commonly used Tyfo® System. It is a unidirectional, e-glass fabric. Tyfo® SEH-51, e-glass/aramid fiber hybrid with similar properties to SEH-51A in the primary fiber direction.

**Tyfo® SEH-25A**, unidirectional, e-glass fabric used for light reinforcement.

**Tyfo® WEB**, lightweight, bidirectional e-glass fabric with primary strength in the +/- 90 degree directions used for light reinforcement, stabilization of masonry elements and as an aesthetic finish fabric.

**Tyfo® BC**, bidirectional custom fabric with the primary strength in the +/- 45 degree directions used to transfer forces from one element to another and for general strengthening.

**Tyfo® UG Strips**, pre-impregnated e-glass laminates available in a variety of widths and thicknesses.

**Tyfo® Tile-Hold**, lightweight, open-mesh e-glass system for the stabilization of building facades.

## Tyfo® Carbon Based Systems

4

Tyfo® SCH Systems are comprised of unidirectional and bidirectional carbon fabrics that are impregnated with Tyfo® epoxies as well as pre-impregnated plates.

**Tyfo® SCH-41**, unidirectional carbon fabric.

**Tyfo® SCH-41S**, unidirectional carbon/aramid fabric with similar properties to SCH-41 in the primary direction.

**Tyfo® SCH-7UP**, unidirectional carbon fabric two-thirds the weight of SCH-11UP fabric.

**Tyfo® SCH-7UP Hi-Mod**, very lightweight, unidirectional carbon fabric with a high modulus of elasticity.

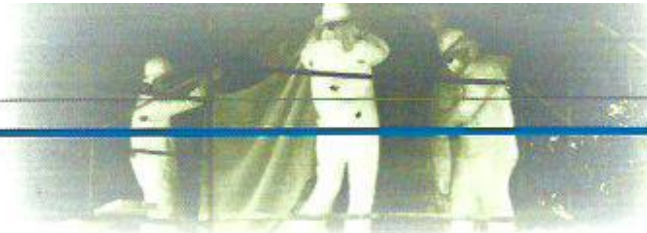
**Tyfo® SCH-11UP**, lightweight, unidirectional carbon fabric.

**Tyfo® BCC**, bidirectional carbon fabric with fibers oriented in the +/- 45 degree direction.

**Tyfo® UC Strips**, pre-impregnated carbon laminates available in a variety of widths and thicknesses.

**Tyfo® CWEB**, lightweight, bidirectional carbon fabric.





## Tyfo® Aramid Based Systems

The Tyfo® SAH and WAB Systems are comprised of unidirectional and bidirectional aramid fabrics that are impregnated with Tyfo® epoxies.

Tyfo® SAH, unidirectional aramid fabric.

Tyfo® WAB, lightweight, bidirectional aramid fabric.



## Tyfo® Anchor Systems

Tyfo® Fibrwrap® Anchors are fiber-based and become embedded within the Fibrwrap® System during installation. They are used to increase bond durability and design efficiency in beam, slab, pipe and wall applications.

Tyfo® Fibrwrap® Super Anchors are a hybrid glass/carbon based system used to provide structural connections between elements.

The following chart displays Typical Test Values for the most commonly used Tyfo® Systems. For Design Values please consult with the Fyfe Company Design Manual or the Fyfe Engineering Staff. All values are determined per ASTM D-3039.

Laminate Properties					
Tyfo® Systems	Tyfo® SEH-51A	Tyfo® SCH-41	Tyfo® WEB	Tyfo® BC	Tyfo® UC Strips
Ultimate Tensile Strength	575 MPa (83,400 psi)	986 MPa (143,000 psi)	309 MPa (44,800 psi)	279 MPa (40,500 psi)	2.79 MPa (405,000 psi)
Modulus of Elasticity	26.1 GPa (3.79x10 <sup>6</sup> psi)	95.8 GPa (13.9x10 <sup>6</sup> psi)	19.3 GPa (2.80x10 <sup>6</sup> psi)	19.0 GPa (2.70x10 <sup>6</sup> psi)	155.1 GPa (22.5x10 <sup>6</sup> psi)
Ultimate Elongation	2.2%	1.00%	1.6%	1.5%	1.8%
Laminate Thickness	1.3mm (0.05 in.)	1.0mm (0.04 in.)	0.25mm (0.01 in.)	0.864mm (0.034 in.)	Varies





# Applications of the Tyfo® Systems

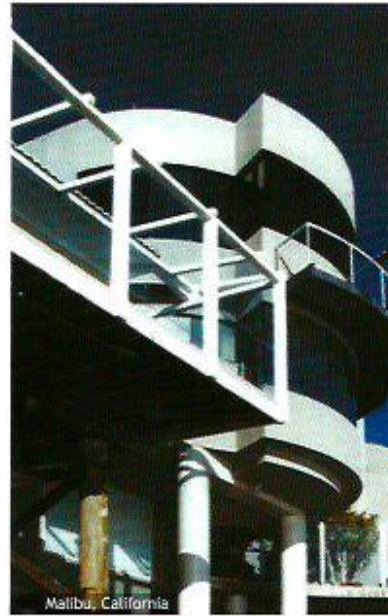
## Columns

The Tyfo® Fibrwrap® Systems are designed to add strength and ductility to existing columns by providing additional confinement. Fyfe Company has conducted full-scale structural testing to demonstrate the system's effectiveness.

Tyfo® Fibrwrap® Systems can be designed to:

- Increase the shear and flexural strength of columns.
- Increase column ductility. Tests have shown displacement ductilities increase of 8+.
- Increase the vertical load capacity by increasing the compressive strength of the concrete.
- Contain corrosion stresses and seal the column from the intrusion of chlorides, moisture and oxygen.

Due to the low profile of the Tyfo® materials, the architectural shape of the column can be maintained. This includes circular, square, rectangular, hexagonal, oblong flared and other shaped columns. The typical system thickness is less than 6mm (0.25").



## Beams and Slabs

The Tyfo® Systems can be used for strengthening both beam and slab elements subjected to increased loading or to enhance the performance of under-reinforced elements. The Tyfo® Systems can also be used as alternatives to conventional strengthening options such as shotcrete or steel plate bonding. Tyfo® Fibrwrap® Anchors provide greater bond durability and design efficiency.



6

## Concrete and Masonry Walls

Many concrete walls or masonry structures of brick, clay tile or concrete block require strengthening to increase both in-plane and out-of-plane performance. The Tyfo® Systems can be used to add the required additional capacity. Tyfo® Fibrwrap® Anchors provide greater bond durability and design efficiency.



## Underwater

Using specially formulated Tyfo® SW-1 resins, the Tyfo® Fibrwrap® System can be used to reinforce underwater elements such as bridge and pier columns and piles.



## Wood

The Tyfo® Systems can be used to retrofit existing wooden elements such as piles, poles, glulam beams, and more.



## Blast Mitigation

Tyfo® Systems are ideal for many blast hardening and mitigation applications. The large strain capacities of Tyfo® materials provide ductility with the addition of only a few millimeters of additional element thickness. Potential applications include mitigating explosions in industrial and petroleum facilities as well as protecting facilities from munitions or terrorist attacks. The Tyfo® Blast-Flex System, a spray-applied elastoplastic material, can also be used for blast mitigation applications.



## Pipes

Pipes, both exposed and underground, deteriorate over time. The Tyfo® Systems can be used to repair and reinforce existing pipes. In some situations, the materials can be installed by manhole access with no excavation needed. Due to the low profile of the System, there is negligible loss in capacity for interior applications. Tyfo® PWC, potable water coating, is available as a final protective coat.



## Fire-Resistant Systems

The Tyfo® FC/F System is a two-part, fire-resistant system applied in conjunction with the Tyfo® Fibrwrap® System. Tyfo® FC/F provides insulation against fire and increases a two-hour fire rating as per ASTM E-119. The newly developed Tyfo® VG/EI-R Fire Protection System is used to protect structural elements that have been reinforced with Tyfo® Fibrwrap® while they are under load.



UL Fire Testing

## Chimneys, Stacks and Tanks

Tyfo® Systems can be applied to the interior or exterior surfaces of chimney, tank and stack structures to increase shear strength, flexural strength and integrity.



Kodak Chimney, USA

## Corrosion

The Tyfo® Fibrwrap® Systems can be used to repair and protect concrete elements from corrosion. In conjunction with Tyfo® Fibrwrap®, Tyfo® CIS Corrosion Inhibitors can be used to treat concrete and reinforcing steel.



Redondo Beach, California

For additional Fyfe Company products and services, such as Forced Entry Systems, concrete repair materials or Tyfo® equipment and safety supplies, please contact a Fyfe Company representative.

For additional information on our Tyfo® products, please visit our website [www.fyfeco.com](http://www.fyfeco.com)

**Fyfe Co.LLC**

3940 Ruffin Road, Suite C,  
San Diego, CA 92123, USA  
Tel: +1.858.642.0694  
Fax: +1.858.444.2982  
info@fyfeco.com



California, USA

**Fyfe Asia Pte. Ltd.**

6 Clementi Loop  
#04-00  
Singapore 129814  
Tel: +65.6898.5248  
Fax: +65.6898.5181  
fyfeasia@singnet.com.sg



Korea

**Fyfe Latin America**

Calle La Mascota y Pje. 3, No.27  
Colonia La Mascota  
San Salvador  
El Salvador  
Tel: +503.2264.9177  
Fax: +503.2264.9168  
info@fyfe-la.com



Thessaloniki, Greece

**www.fyfeco.com**

Authorized Fyfe Company Representative:

**FIBRWRAP CONSTRUCTION (M) SDN. BHD.**  
Co. No. 634236W  
No. 5-4 (3rd Floor)  
Jalan Kuchai Maju 11 (Jalan 10/116B)  
Kuchai Entrepreneur's Park  
Off Jalan Kuchai Lama 58200 Kuala Lumpur  
Tel: (03) 7987 3177 Fax: (03) 7987 6177



## INSITUFORM® CIPP

*Affordable, reliable and non-disruptive solutions for sewer pipe reconstruction*



### Our Trenchless Solution

The Insituform® cured-in-place pipe (CIPP) is a jointless, seamless, pipe-within-a-pipe used to rehabilitate foul sewers, storm sewers and rising mains ranging in diameter from 100mm to 2500mm.

### Insituform® CIPP addresses your top concerns:

**Infiltration reduction.** Water entering your sewer system through cracks, holes and joint failures can overload your treatment facilities, especially during wet weather. Insituform® CIPP significantly reduces this infiltration. In dry climates, roots find the sewer system an attractive source of water and nutrients and create blockages and overflows. Insituform® CIPP contains your flow within the pipe while keeping external water and roots out.

**Structural integrity.** Insituform® CIPP restores structural integrity to your damaged sewer pipes. The design models used, independent test results and over 40 years of service all confirm that Insituform® CIPP is a structural product with a 100-year design life.

**Increased flow capacity.** Insituform® CIPP provides the least cross-sectional reduction of all methods used to rehabilitate pipes. There are no joints or seams that can separate over time and the smooth, jointless interior provides excellent abrasion resistance and typically improves flow capacity.

**Affordability.** The Insituform® CIPP process is usually less expensive than conventional dig and replace methods of sewer repair. When the lost business revenues, traffic congestion and social costs associated with other methods are considered, your savings are immeasurable.

**Installation flexibility.** Insituform® CIPP can be installed using either air or water inversion or by pulling into place. The cure can be done with steam or hot water. All processes are consistent with nationally recognized standards and Insituform's own ISO-certified quality control program. Since each job is unique, we apply the most cost-effective, technically optimal solution to meet your pipeline rehabilitation needs.

## INSITUFORM® CIPP

### Insituform® CIPP is the best choice for trenchless rehabilitation.

#### Insituform superior processes

Since inventing CIPP over 40 years ago, Insituform has developed the highest quality manufacturing and installation systems in the trenchless industry.

As a vertically integrated company, we take responsibility for research and development, manufacturing, installation and service. Our systems are designed to produce consistency and high performance in our products and services.

#### Manufacturing

Insituform's patented manufacturing capabilities are certified to the ISO 9001:2008 standard, ensuring that our tubes are constructed for optimal long-term performance. During the manufacturing process, each tube goes through 25 separate quality checks.

#### Wet out

Insituform's resin impregnation process ensures that Insituform® CIPP achieves the required strength and enables wet out of many lengths, diameters and thicknesses and allows a faster wet out in less space, saving on time and money.

Insituform's wet out facilities utilize environmentally friendly methods and equipment.

#### Installation

Every Insituform installation is completed using our own safety-certified crews who follow strict safety procedures and documented work practices. Each crew is equipped with highly specialized equipment, backup resources and engineering support.

Insituform's advanced installation methods include air invert steam cure, which reduces water usage on a job site by approximately 95% and energy usage by 75%.

### Transportation Solutions

Insituform offers affordable, trenchless solutions to renew and extend the life of underground storm sewers and drainage structures. A large number of culverts running under roadways are approaching or have exceeded their expected design life. A culvert or storm sewer pipe collapse can have catastrophic effects on the traveling public, your budget and your credibility. Insituform can help you avoid the direct costs and the social costs of a failure by proactively renewing your underground assets.

For transportation projects, particularly culverts, Insituform uses installation methods that minimize the use of water and maximize resin containment, thus protecting downstream waters from contamination.

### The Insituform® CIPP Installation Process



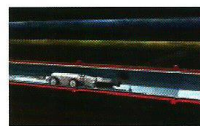
#### Step 1:

A resin-saturated, coated felt tube is inverted (shown) or pulled into a damaged pipe.



#### Step 2:

Hot water or steam is used to cure the resin and form a tight-fitting, jointless and corrosion-resistant replacement pipe.



#### Step 3:

Service laterals are restored internally with robotically controlled cutting devices and the rehabilitated pipe is inspected by closed-circuit TV.

### The Insituform® CIPP Technical Envelope

#### The Insituform® CIPP Technical Envelope

Diameter range	100mm – 2500mm*
pH range	0.5 – 10.5
Effluent temperature	up to 60° C
Pipe condition — fully deteriorated	Yes
Pipe condition — partially deteriorated	Yes
Bends	Yes
Offset joints	Yes
Diameter changes	Yes, without manhole access
Thickness changes	Yes, without manhole access
Typical shot length	60m to 300m
Host pipe shape	All shapes
Host pipe material	All materials

\* Thickness and length limitations in larger diameters

This table refers to general public service CIPP projects. Insituform can provide products that extend beyond these parameters through our engineering group.

FYFE ASIA PTE LTD  
FIBRWRAP CONSTRUCTION PTE LTD  
6 CLEMENTI LOOP, #04-00, SINGAPORE 129814

Authorized Fibrwrap Company Representative:

FIBRWRAP CONSTRUCTION (M) SDN. BHD.  
Co. No (634236W) No. 5-4 (3rd Floor)  
Jalan Kuchai Maju 11 (Jalan 10/116B)  
Kuchai Entrepreneur's Park  
Off Jalan Kuchai Lama 58200 Kuala Lumpur  
Tel: (03) 7987 3177 Fax: (03) 7987 6177  
Email: admin@fibrwrap.my