

RELEVANT EXPERIENCE

HIGHRISE BUILDINGS - GLOBAL



Project	Location
640 Bourke Street • Tuned sloshing damper concept design	Melbourne, Australia
Celtic • Supplementary damping system concept design	Melbourne, Australia
Collins House • Tuned sloshing damper design and implementation	Melbourne, Australia
Paragon Apartments • Tuned sloshing damper design and implementation	Melbourne, Australia
Victoria One • Tuned sloshing damper concept design	Melbourne, Australia
97 Franklin Street Tower • Tuned sloshing damper design and implementation	Melbourne, Australia
180 George Street • Tuned sloshing damper design and implementation	Sydney, Australia
One Sydney Harbour Towers 1 and 2 • 430 tonne tuned mass damper concept design	Sydney, Australia
Crown Sydney Hotel and Resort • 200 tonne tuned mass damper	Sydney, Australia
Pitt Street Station - Over Station Development Tower • Damping system concept design	Sydney, Australia
Firehouse Hotel • Preliminary damping system assessment	Sydney, Australia
Baku Tower • One 750-ton tuned mass damper detailed design	Baku, Azerbaijan
Rogers M City Towers 1, 2, 3 & 4 - Garden City • Tuned sloshing damper design for towers 1, 2 & 4. • 705 tonne tuned mass damper for tower 3.	Mississauga, Canada
Tower Hotel • Structural monitoring	Niagara Falls, Canada
10 York Street • Tuned sloshing damper feasibility study	Toronto, Canada
37 Yorkville Avenue • Tuned sloshing damper concept design	Toronto, Canada

Project	Location
480 University Avenue • Tuned sloshing damper design and implementation	Toronto, Canada
Casa 2 • Tuned sloshing damper design and implementation	Toronto, Canada
Massey Tower • Tuned sloshing damper space optimization	Toronto, Canada
The One • Tuned mass damper design	Toronto, Canada
YC Condos • Tuned sloshing damper concept design	Toronto, Canada
Trump International Hotel & Tower • Two 115 tonne tuned sloshing dampers	Vancouver, Canada
One Wall Center • 600 tonne tuned liquid column damper	Vancouver, Canada
Haikou Tower – IFC A • Tuned sloshing damper detailed design and performance analysis	Haikou, China
Qingdao Haitian Hotel • World’s first irregular-shaped tuned sloshing dampers	Qingdao, China
Shanghai Tower • 1000 tonne Eddy current damper	Shanghai, China
Luohu Innovative Financial Area Phase I • Tuned sloshing damper - detailed design	Shenzhen, China
Ping An Finance Center • Two tuned mass dampers of 600 tonnes each - implementation assessment	Shenzhen, China
Shenzhen Evergrande Center • 600 tonne tuned mass damper – detailed design and performance analysis	Shenzhen, China
Shenzhen Guozhan Bagualing Project • Tuned sloshing damper implementation assessment	Shenzhen, China
Suzhou IFS / Suzhou Wharf Tower • 800 tonne tuned sloshing damper	Suzhou, China
Suzhou Taihe Yinshan Lake Plot A • Supplementary damping system concept design	Suzhou, China
Suzhou Zhongnan Center • One 660 tonne tuned mass damper detailed design • Two 600 tonne tuned sloshing damper detailed design	Suzhou, China
Tianjin Xiangluo Bay A09 Site • Tuned sloshing damper detailed performance analysis	Tianjin, China

Project	Location
Zhuhai Hengqin IFC Tower <ul style="list-style-type: none"> 4-tank bi-directional tuned sloshing damper configuration - detailed performance analysis, detailed design drawing; 	Zhuhai, China
Zhuhai Huafa Plaza - Tower 3 <ul style="list-style-type: none"> Tuned sloshing damper detailed performance analysis 	Zhuhai, China
4 Seasons Mumbai <ul style="list-style-type: none"> One 480 ton and one 120 ton tuned sloshing damper 	Mumbai, India
King Tower <ul style="list-style-type: none"> Tuned sloshing damper concept design 	Mumbai, India
World Crest (Prince) Tower <ul style="list-style-type: none"> Tuned sloshing damper 	Mumbai, India
Petronas Towers Skybridge <ul style="list-style-type: none"> Three tuned mass dampers on each of the four legs 	Kuala Lumpur, Malaysia
Commercial Bay Office Tower <ul style="list-style-type: none"> Tuned sloshing damper design and implementation 	Auckland, New Zealand
The Royalton <ul style="list-style-type: none"> Supplementary damping system concept design 	Manilla, Philippines
Akhmat Tower <ul style="list-style-type: none"> Supplementary damping system concept design 	Grozny, Russia
Federation Tower Spire <ul style="list-style-type: none"> Damping system feasibility study 	Moscow, Russia
Kingdom Tower <ul style="list-style-type: none"> Implementation assessment 	Jeddah, Saudi Arabia
Hyundai Seongsu-Dong <ul style="list-style-type: none"> Supplementary damping system concept development and detailed analysis 	Seoul, South Korea
NanShan Plaza <ul style="list-style-type: none"> Two 500 tonne tuned mass dampers 	Taipei, Taiwan
Taipei 101 <ul style="list-style-type: none"> 660-ton tower tuned mass damper design build Two 4.5 tonne pinnacle tuned mass dampers design build 	Taipei, Taiwan
Soontareeya Tower <ul style="list-style-type: none"> Supplementary damping system concept design 	Bangkok, Thailand
Burj Dubai <ul style="list-style-type: none"> Tower Damping Concept Design Spire/pinnacle damping concept design 	Dubai, UAE
Burj Dubai Lake Hotel Spire <ul style="list-style-type: none"> Tuning and commissioning 	Dubai, UAE
DMCC Burj 2020 District - Commercial Tower <ul style="list-style-type: none"> Damping system 	Dubai, UAE

Project	Location
Downtown Dubai Development Opera District – Plots D1 and D2 • Tuned sloshing damper implementation assessment	Dubai, UAE
Entisar Tower • 1200 tonne tuned mass damper implementation assessment	Dubai, UAE
Princess Tower • 497 tonne tuned sloshing damper design and implementation	Dubai, UAE
SRG Residential Tower - Business Bay • 1850 tonne tuned mass damper implementation assessment	Dubai, UAE
Newfoundland Tower • Tuned sloshing damper	London, UK
Portal West Tower London • Tuned sloshing damper concept design	London, UK
Four Seasons Hotel, One Dalton Street • Tuned sloshing damper design and implementation	Boston, USA
465 North Park Drive • Tuned sloshing damper design and implementation	Chicago, USA
Park Tower • 300-ton tuned mass damper	Chicago, USA
Chicago Spire • Active mass damper performance design	Chicago, USA
Lake Shore East - Buildings J, K & L • Tuned sloshing damper implementation assessment	Chicago, USA
One Bennett Park • Tuned sloshing damper	Chicago, USA
NEMA Chicago • Tuned sloshing damper	Chicago, USA
Signature Tower • 600 tonne tuned mass damper detailed design	Nashville, USA
1 Park Row • Tuned sloshing damper concept design	New York, USA
10 Barclay Street • Tuned sloshing damper	New York, USA
100 East 53 rd Street • 420 tonne tuned mass damper	New York, USA
111 Murray Street • One 570-ton tuned mass damper	New York, USA
111 Washington Street • Tuned sloshing damper	New York, USA

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111 West 57 th Street <ul style="list-style-type: none"> • 726 tonne tuned mass damper 	New York, USA
123 Washington Street <ul style="list-style-type: none"> • Tuned sloshing damper 	New York, USA
131 East 47 th Street <ul style="list-style-type: none"> • Tuned sloshing damper detailed performance analysis 	New York, USA
151 Maiden Lane <ul style="list-style-type: none"> • Tuned sloshing damper 	New York, USA
180 East 88 th Street <ul style="list-style-type: none"> • Tuned sloshing damper design and implementation 	New York, USA
215 W 57 th Street <ul style="list-style-type: none"> • Tuned mass damper 	New York, USA
262 5 th Avenue 450 ton bi-tuned, opposed pendulum tuned mass damper detailed performance analysis	New York, USA
30 East 31 st Street <ul style="list-style-type: none"> • Supplementary damping system concept design 	New York, USA
42-02 Orchard Street <ul style="list-style-type: none"> • Tuned sloshing damper 	New York, USA
44 West 66 th Street Tuned sloshing damper design and implementation	
45 Broad Street <ul style="list-style-type: none"> • 400 ton bi-tuned, opposed-pendulum tuned mass damper detailed performance analysis 	New York, USA
45 Park Place <ul style="list-style-type: none"> • • Tuned sloshing damper design and implementation 	New York, USA
49 East 34 th Street Supplementary damping system concept design	New York, USA
50 Hudson Blvd <ul style="list-style-type: none"> • Damper concept design 	New York, USA
520 West 41 st Avenue <ul style="list-style-type: none"> • 600 ton bi-tuned; opposed-pendulum tuned mass damper detailed performance analysis 	New York, USA
56 Leonard Street <ul style="list-style-type: none"> • 160 tonne tuned sloshing damper 	New York, USA
610 Lexington Avenue <ul style="list-style-type: none"> • Concept & detailed design, two 325-ton tuned mass dampers 	New York, USA
740 8 th Avenue <ul style="list-style-type: none"> • Tuned sloshing damper 	New York, USA

Project	Location
80 South Street Tower Project • Tuned mass damper concept design	New York, USA
9 Dekalb Avenue Tower Tuned sloshing damper, performance analysis & design	New York, USA
95 Rockwell Place • Tuned sloshing damper	New York, USA
Barclay Tower • 170 tonne tuned sloshing damper design & implementation	New York, USA
Bloomberg Tower • 600 tonne tuned mass damper design build	New York, USA
Carnegie Hall Tower Tuned sloshing damper	New York, USA
City Point III • Tuned sloshing damper	New York, USA
Hudson Yards Tower D Tuned sloshing damper	New York, USA
Hudson Yards Tower A • 650-ton tuned mass damper detailed performance analysis	New York, USA
Hudson Yards Tower E • 150-ton tuned mass damper detailed performance analysis	New York, USA
Madison Square Park Tower • Damper implementation assessment and concept design	New York, USA
MoMA Tower • 450-ton tuned mass damper concept design	New York, USA
One Vanderbilt - JPMorgan Chase Headquarters • 520-ton opposed pendulum tuned mass damper	New York, USA
Random House Tower 700 tonne tuned liquid column dampers	New York, USA
Tower Fifth • Tuned mass damper concept design	New York, USA
Sutton Place Tower • 800-ton bi-directional tuned mass damper concept design	New York, USA
The Beekman Residences • Tuned sloshing damper	New York, USA
The Centrale • 450-ton pendulum tuned mass damper	New York, USA
Trump World Tower • 600 tonne tuned mass damper	New York, USA

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Turkevi Center <ul style="list-style-type: none"> • 400 tonne tuned mass damper 	New York, USA
W Downtown Hotel & Residences <ul style="list-style-type: none"> • • 45 tonne tuned sloshing damper 	New York, USA
West 62 nd Street & Amsterdam Tuned sloshing damper	New York, USA
Comcast Center <ul style="list-style-type: none"> • 1,300 ton tuned liquid column damper 	New York, USA
The Comcast Technology Center <ul style="list-style-type: none"> • Bi-directional tuned sloshing damper 	Philadelphia, USA
Walnut Street Tower <ul style="list-style-type: none"> • Tuned sloshing damper 	Philadelphia, USA
181 Fremont Street <ul style="list-style-type: none"> • Supplementary damping system concept design 	Philadelphia, USA
<ul style="list-style-type: none"> • 	San Francisco, USA

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BRIDGES AND LONGSPAN FLOORS



Project	Location
1175 Vanguard West Campus Building 35 bridge • Four 2 ton tuned mass dampers	Malvern, USA
Apple Store Pacific Centre • Tuned mass dampers (500 kg and 1 tonne)	Vancouver, Canada
ARIA Resort and Casino - Ballroom Floor • Vibration assessment and tuned mass damper concept design	Las Vegas, USA
Atlanta Botanical Gardens Pedestrian Bridge • Design of distributed tendon dampers	Atlanta, USA
Bagley Avenue Pedestrian Bridge (Ambassador Gateway) • Vertical and lateral tuned mass dampers (multiple)	Detroit, USA
Beanfield Centre - Pedestrian Bridge • One 500 kg tuned mass damper	Toronto, Canada
Bellagio and Spring Mountain Pedestrian Bridge • Twelve tuned mass dampers (multiple sizes)	Las Vegas, USA
Burgoyne Bridge • Damping solution – pickets	St. Catharines, Canada
Complexe les Ailes - Passerelle (Bridge) • One 1 tonne tuned mass damper	Montreal, Canada
Cumberland River Pedestrian bridge • Three tuned mass dampers	Nashville, USA
Grand Canyon Skywalk • Three 1.2 tonne tuned mass dampers	Peach Springs, USA
Guangxi Baidong Lookout • Three 1tonne tuned mass dampers	Guanxi, China
Hunt Club Pedestrian Bridge, Ottawa Airport Parkway • Two 750 kg tuned mass dampers	Ottawa, Canada
I-74 Bridge • Damping solution design	Davenport, USA
Kennedy Center Pedestrian Bridge • Tuned mass damper concept design	Washington, USA

Project	Location
Lusail Footbridge Vibrations • Monitoring of cable vibration mitigation devices	Lusail, Qatar
Madison Square Garden • Five tuned mass dampers	New York, USA
Martin Olav Sabo Pedestrian Bridge • Impact dampers on cables	Minneapolis, USA
MGM Mirage City Center Block B & C Pedestrian Bridges • Tuned mass damper design	Las Vegas, USA
Oakley C. Collins Memorial Bridge (Ironton-Russell Bridge) • Design of tuned mass dampers and stay cable dampers	Ohio/Kentucky, USA
Ottawa Airport Parkway Pedestrian Bridge • Two TMD's @ 750 kg each	Ottawa, Canada
Palms Casino Resort Rain Night Club Renovation – Floor Vibration • Tuned mass damper	Las Vegas, USA
Pearson-East Pedestrian Bridge • Six viscous damping devices	Toronto, Canada
Port Lands Pedestrian Bridges • Tuned mass dampers (multiple)	Toronto, Canada
Qiantan Four Square City Pedestrian Bridge • Tuned mass dampers (multiple)	Shanghai, China
Red Hill Creek Bridge • Five TMD's @ 2 tonnes each	Hamilton, Canada
Royal Alexandra Bridge Rehabilitation • Eight TMD's @ 5 tonnes each	Ottawa, Canada
Seattle-Tacoma (Sea-Tac) International Airport Bridge • Two 8.8 ton tuned mass dampers	Seattle, USA
Shenzhen Western Corridor Bridge • Seven 5-1/2 tonne tuned mass dampers	Hong Kong, China
Spring Mountain Road & Las Vegas Boulevard Pedestrian Bridges • Damping system design (3 bridges)	Las Vegas, USA
State Road 414 Bridge Extension Over US 441 • Four tuned mass dampers	Orlando, USA
Treasure Island/Venetian Pedestrian Bridge • Six 1.5 tonne tuned mass dampers	Las Vegas, USA
Wichita Riverfront Pedestrian Bridge • Five TMD's @ 1.5 tonnes each	Wichita, USA

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UNIQUE STRUCTURES



Project	Location
Tsukuba Isolation Platform	Quebec, Canada
Wind Turbines for Urban areas	Canada
Sakhalin 1 - Drilling Rig, Sakhalin Island <ul style="list-style-type: none"> • 100 tonne tuned mass damper for seismic damping 	Sakhalin Island, Russia
Expo 2020 Mobility Pavilion - Fins <ul style="list-style-type: none"> • Supplementary damping system concept design 	Dubai, UAE
British Airways i360 Tower	Brighton, UK
US Air Force Memorial <ul style="list-style-type: none"> • Ball-in-box impact dampers performance verification 	Arlington, USA
Spire of Dublin <ul style="list-style-type: none"> • 1250 kg tuned mass damper & 800 kg tuned mass damper 	Dublin, Ireland
Studio Museum of Harlem <ul style="list-style-type: none"> • Tuned mass damper concept development 	New York, USA
Hudson Yards Art Sculpture - The Vessel <ul style="list-style-type: none"> • Tuned mass damper consultation 	New York, USA
Grand Canyon Skywalk <ul style="list-style-type: none"> • Three 1.2 tonne tuned mass dampers 	Peach Springs, USA

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AIR TRAFFIC CONTROL TOWERS



Project	Location
McCarran International Airport Air Traffic Control Tower <ul style="list-style-type: none">• 60 ton tuned mass damper	Las Vegas, USA
San Francisco Air Traffic Control Tower <ul style="list-style-type: none">• Tuned mass damper concept design	San Francisco, USA
Calgary Air Traffic Control Tower <ul style="list-style-type: none">• 50 tonne tuned mass damper	Calgary, Canada
Toronto Pearson Airport Apron Control Tower - Terminal 1 <ul style="list-style-type: none">• Tuned mass damper design & implementation	Toronto, Canada
Mexico City International Airport (NAICM) <ul style="list-style-type: none">• Peer review	Mexico City, Mexico
Cancun Air Traffic Control Tower <ul style="list-style-type: none">• Tuned mass damper design & implementation	Cancun, Mexico
Muscat Air Control Tower <ul style="list-style-type: none">• Tuned mass damper design	Muscat, Oman