STEEL HORIZONS ASSEMBLED VOL 1

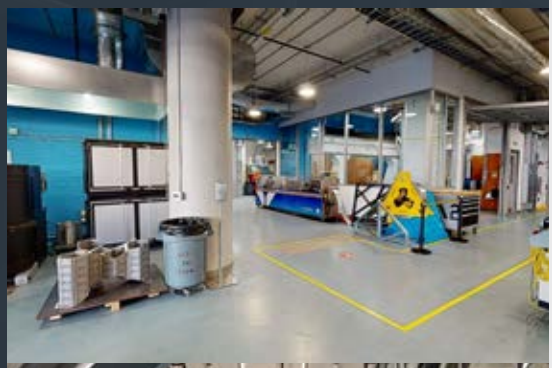
International experts in modern construction methods join Howick in London for inaugural STEEL HORIZONS event

STEEL HORIZONS HEADS TO BOSTON FOR 2023

HOWICK

EXPLORING THE FUTURE FOR **MODERN CONSTRUCTION**

Exploring the future for Modern Construction



After the highly successful inaugural STEEL HORIZONS event in London, and with a follow-up event diarized for Boston, USA on June 22, 2023, Howick now brings you STEEL HORIZONS | ASSEMBLED.

This publication brings together presentations and insights from our expert event speakers, plus gives access to other valuable case studies that we believe exemplify modern construction methods using steel framing technology.

STEEL HORIZONS | ASSEMBLED lives to provide an additional channel advocating for better ways of building. We hope you enjoy it and find its content of value.

This is just a taste of things to come. If you have stories, showcases or valuable insights that you would like to share for consideration in future editions of this magazine, please let us know **via email here**.

Cindy Posimani
Head of Global Marketing & Export Howick

International experts in MMC join Howick in London for inaugural STEEL HORIZONS event

The focus of Howick on innovation in construction and advocating for better ways of building came to the fore post-Covid, with a unique event held in London.

Aptly named **STEEL HORIZONS | LONDON**, the event took place in the Penthouse Suite of New Zealand House in the central Haymarket district of London. The venue delivered on its promise, providing panoramic views of the London skyline to inspire and delight. Feedback from guests also suggests the content lived up to expectations too.

The by-invitation event was initially over-subscribed. Despite a national rail strike in the UK, attendance was such that extra seating was needed to accommodate everyone. Many guests literally went the extra mile to attend. In one example, someone drove for many hours each way to make it from Harrogate in the far north of England to London. It also had a true international flavour, with attendees and participants from the US, Europe and New Zealand, as well as the UK.

Guest speakers representing a range of leading-edge construction disciplines provided insights and case studies into how construction is benefitting from new ways of thinking about the design and build process. Some of the key “ah ha!” moments are covered on the following pages of this first edition of **STEEL HORIZONS I ASSEMBLED.**

Follow-on event STEEL HORIZONS | BOSTON fast approaching

The event for 2023 is now fast approaching. STEEL HORIZONS | BOSTON will be held on June 22 at the Autodesk Technology Center in Boston, USA. More details of the guest speakers follow in this publication. Aimed at construction business leaders looking for insights into current MMC practices who want to hear about the technology and techniques coming to the fore, interested parties can register their interest to attend, or receive access to the talks after the event, by visiting the event website.

STEEL HORIZONS | BOSTON

June 22, 2023, Autodesk Technology Center, Boston, USA

“Innovation is everywhere. The technology to take your business to the next level exists, it is out there, just find out how it fits into your business and use it to your advantage – that is how you are going to grow and scale.” Dave Cooper on how to grow and scale construction businesses.

- Dave Cooper

Watch The Video

Innovation everywhere!

A global view of innovation in the built environment

Opening proceedings at STEEL HORIZONS | LONDON, Dave Cooper’s talk focused on how to grow and scale construction businesses.

He provided a high-energy, quick-fire global view of innovation in the built environment.

As co-founder of US-based “Build It Better” media company Dave Cooper LIVE, Dave is well placed to talk on this subject. He spends his time visiting and speaking with construction businesses the world over that are “building better buildings smarter”.

His talk summarised some of the key themes he sees emerging, zooming in on the insight that “the profit is in the process”. With global supply chains a disaster area at the time of the presentation, new entrants to the market are rapidly adopting digitization, data and other technologies to transform the building sector.

His parting observation was that innovation is everywhere, collaboration is key and the technology to take construction to the next level is out there – you just need to work out how it fits, and use it to your advantage to grow and scale.

You can watch Dave’s full presentation **here.**

Design to build technologies and systems at KREOD

“You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete”. That quote by Buckminster Full sums up the approach that drives Chun Qing Li (Lee).

Lee, founder and CVO of KREOD, presented some amazing design-to-build technologies and systems being developed and employed by his KREOD group of companies.

Defining what his businesses do as ‘digital master builders’, he emphasised the need to pre-empt and solve problems in advance of construction.

“It’s all about risk management, identifying the foreseeable site challenges in advance and using that insight to inform the design-to-build process”, he stated.

Through complete showcases, Lee’s presentation at STEEL HORIZONS | LONDON brought to life how efficiencies in the build process have equaled higher profit margins for his businesses and better buildings for his clients.

You can watch Lee’s full presentation **here**.

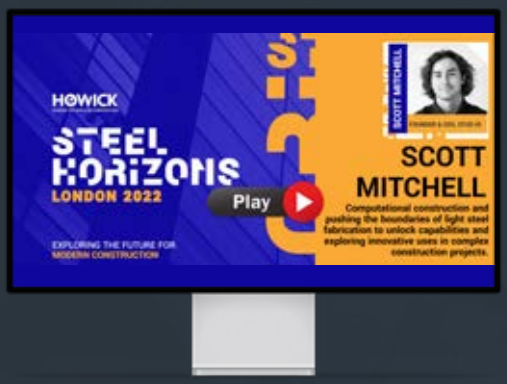
“So, people always ask me, how much does a building cost? How can I know? Actually, it is with an informative design approach from concept design to the RIBA stage 2, that we can immediately arrive to the RIBA stage 4, so this gives our clients certainty.” Chun Qing Li on utilizing technology to deliver accuracy to expedite stages through the RIBA model for better cost transparency and enabling better strategic material cost forecasting.

- Chun Qing Li (Lee)

Watch The Video

“CNC & digital fabrication equipment is designed with some set of use cases in mind, but really that’s just a small subset of a lot of latent potential. What we are doing is slowly expanding the capabilities of the machine.” Scott Mitchell on the theory of taking existing machinery with otherwise limited applications and applying creative uses.

- Scott Mitchell



Watch The Video

STUD-IO Showcase

Pushing the boundaries of light steel fabrication

Scott Mitchell, founder of computational construction and design business STUD-IO in the US, used his moment on the stage at STEEL HORIZONS | London to showcase how his firm is pushing the boundaries of light steel fabrication.

He described his background as “playing around with digital fabrication equipment to re-imagine how it can be applied to architecturally complex projects”.

He explained how the relatively small number of high precision basic functions that CNC machines are capable of can be reimagined to create truly complex physical built structures.

“We play the Howick machine like a game… like you would play a musical instrument.” he said. “It’s similar to a music score where a small number of simple notes can be combined to create a symphony.”

STUD-IO takes typical use cases and applies computational techniques to change the perceived boundaries of machines. This means Howick machines designed to output straight roll-formed steel components can be employed to create highly complex curved construction designs.

You can watch Scott’s full presentation **here.**

The Forge Project

Pushing the boundaries of construction

The Forge project in Southwark on London's South Bank pushed boundaries in MMC approaches – literally and figuratively – acting as a proof point for Bryden Wood's **'kit of parts'** construction philosophy.

As a case in point, Nicola's presentation described the façade of The Forge building, which was reduced to about ten elements that could be componentized, picked up and delivered just in time in a pre-defined order for installation onsite.

The benefits of this approach are manyfold. Specific analysis identified a 30% reduction in embodied carbon usage and 13.5% increase in productivity. All of this was despite the significant workforce and supply chain issues caused by the pandemic raging at the time.

View Nicola's full presentation at STEEL HORIZONS | LONDON **here**.

"We get standardized processes in manufacturing and assembly so this enables us to have diversification of the sector, so we can upskill non-construction personnel which is very important with the current challenges we have in getting the right personnel that we need." Nicola Moriarty on the benefits of standardizing processes.

- Nicola Moriarty

Watch The Video

“The amount of scrap in the world does not satisfy the demand for new steel. There will always be a demand but how do we make that in a more sustainable way and without stranded assets in the future?” Matthew Teague on the future of steel, the hierarchy of actions to take and the vital role DfMA plays.

- Matthew Teague

Watch The Video

How Design for Manufacture & Assembly (DfMA) can make for better buildings

At the London event, Matthew’s presentation spoke to the topic of design-led, manufacturer-enabled construction and how Design for Manufacture and Assembly (DfMA) can make for better buildings.

Tata Steel is the largest steel maker in the UK. Their main facility at Port Talbot has capacity for about 6 million tonnes of liquid steel and contributes 8,500 jobs and GBP3.5 billion to the local economy.

Matthew highlighted the main challenge for Tata Steel is to make new steel in a sustainable way. The drive towards DfMA has a big part to play in this, he said.

Lower costs, faster delivery, improved export all contribute. Referring to **The Forge** example, he noted that normally such a building would use 30 times more steel beams. In this case, it also achieved a 22% reduction in embodied carbon.

This exemplifies why smarter construction practices, using kits of parts and selling products direct from manufacturer are central to Tata Steel’s engagement strategy.

You can watch Matthew’s full presentation **here**.

Innovations in light steel manufacturing

Our final speaker of the day in London was Howick's own, CEO Nick Coubray.

Nick gave an overview of recent and forthcoming innovations, starting with the Howick **X-TENDA™** 3600 which produces extendable framing for interiors.

When it comes to uneven and non-level infill requirements, speed is often the biggest driver but accurate measurement is difficult and time consuming.

Extendable framing produced by the X-TENDA™ 3600 overcomes this by expanding in any direction to fit any space, irrespective of how level it is.

Nick demonstrated that installation times with telescopic frames flat packed delivered 50% time savings, and as much as 70% when these were delivered panelised instead of flat packed.

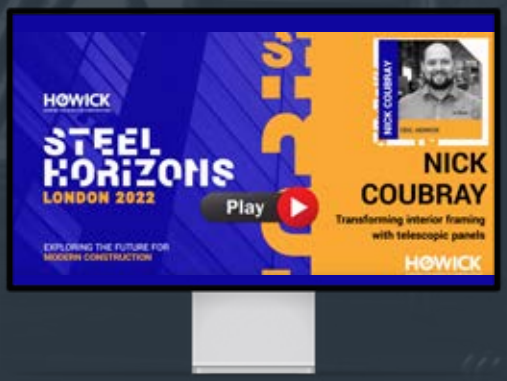
In another case study, a contractor undertaking a fire stopping installation for double-T concrete floors with extendable frames was able to fit each one in 2.5 minutes. It was taking one hour normally.

Other developments Nick spoke of included a new coil loading system using human operated robotic technology to provide improved health and safety on the factory floor as well as reduced down time. He also provided details of heavier systems that are being employed to allow for wider spans and replace hot rolled steel alternatives for load bearing requirements.

You can watch Nick's full presentation **here.**

"The innovation is there, but it is getting clients and everybody else moving forwards in the right direction together." Nick Coubray on the importance of collaboration to see the uptake of new technologies advance across the fragmented world of construction.

- Nick Coubray



Watch The Video

STEEL HORIZONS HEADS TO BOSTON FOR 2023

For leaders in the offsite and modular space looking to build better and smarter, STEEL HORIZONS | BOSTON promises to be a day of inspiration, networking, and stimulating discussion.

The cast of speakers includes notable innovators, thought leaders and specialists representing a range of construction disciplines. They share the common thread of leading-edge experience with aspects of smarter, more efficient and sustainable ways of building. Their perspectives will provide guests with an enlightening overview of the technological evolution currently underway in the sector in the USA and beyond.

STEEL HORIZONS | BOSTON is a complimentary, by-invitation event, taking place on Thursday, 22 June 2023, from 9.30 am to 3.30 pm.

It will be held at the **Autodesk Technology Center, Boston**. With Autodesk's focus on fostering technological innovation, this facility provides the ideal venue.

Following an insightful morning of presentations, guests will enjoy a tour of the Autodesk facility with its innovation zones, including the opportunity to see the latest tools and technology in action.

As a long-term collaboration partner with Autodesk, Howick can reveal that this will also include a demonstration of the game-changing Howick **X-TENDA™** 3600, now resident at the Technology Center, which manufactures extendable framing components for interior walls and ceilings.

Lunch and refreshments will follow, giving guests the opportunity to meet the presenters and network with industry peers.

Access all areas

To get a full overview of the event program, and register your interest in attending, visit the STEEL HORIZONS | BOSTON website.

Please note that capacity at the Autodesk Technology Center is limited, so attendance is by invitation only. If you are not able to join us in person, you can also register to receive access to the presentations after the conclusion of the event.

THE "WHO'S WHO" OF OUR EXCITING SPEAKER LINE UP FOR STEEL HORIZONS | BOSTON

ALLISON SCOTT

MC, Director, Customer Experience & Industry Advocacy, Autodesk

Presentation topic: MC

Leveraging over a decade in the architecture and construction industries, Alli is a "technology translator" who supports customer experience and industry advocacy within the Customer Success team at Autodesk. She oversees the strategy and execution of customer-centric programs that complement the customer journey to help construction teams gain the most value out of their technology investments, and foster loyalty and trust.

Alli has been a key contributor for Autodesk's leading-edge approach to customer engagement, including a highly rated global executive council program, a growing online community, and industry impact programs that help bring awareness to industry issues. Prior to Autodesk, she supported the national Innovation group of Skanska USA's construction division helping to investigate and integrate game-changing tech like BIM/VDC, wearables, IoT/ sensors, and drones onto the jobsite, and built business strategy for new products and services inspired by innovation endeavors. Alli holds a Bachelor of Arts in Theatre and Arts Management from Emerson College and an MBA in Innovation and Design Management from Suffolk University's Sawyer Business School.

When not exploring the next great emerging tech, Alli can be found tending to her herb garden or spending time along the rocky shores of Massachusetts or lakeside in Maine with her architect-husband and young son.

DAVE COOPER

Co-Founder & Host, Dave Cooper LIVE

Presentation topic:

Megatrends driving innovation and the adoption of industrialized construction

Dave Cooper is a super connector in the global industrialized construction sector who has built a multi-media highway of case studies featuring industry leaders who drive business forward.

As host of the livestreaming **Dave Cooper LIVE Show**, he has interviewed close to 2000 professionals in the ecosystem of the built environment including the largest construction companies, c-suite executives, fabricators, supply chain experts and start-ups. Dave is a community builder where membership is inclusive and viewers are encouraged to participate in the conversation.

Dave has spent the last five years touring smart cities, net zero master planned communities, manufacturing facilities, skills training academies, job sites and more seeking out the emerging building products, technology and advanced building processes around the world. His award-winning work has been featured in dozens of outlets including The Wall Street Journal, Bloomberg and Forbes.

Before becoming a custom home builder, Dave served as a combat medic in the U.S. Army. During the pandemic, he took the Dave Cooper LIVE Show on the road living fulltime in a motorhome with his wife and three children as they travelled throughout the United States.

BRANDON IONATA

Line Senior Director, StrucSoft Solutions

Presentation topic:

BIM in the workshop – Revit, not just for architects anymore!

Immersed from a young age in the built environment through his family's construction business, Brandon has leveraged that life experience into his professional career at StrucSoft over the last 11 years. An expert at enabling customers to bridge the gap between design and manufacturing, Brandon leads the StrucSoft team as they push the boundaries of 3D BIM workflows, development of Revit add-ons and bespoke custom programming projects for wood and light steel framing.

Brandon is a family man and father to his 2 year old little girl and maintains his hands-on roots - hunting, fishing and restoring vintage Harley Davidsons in his spare time.

MAGDALENA KOWALCZYK

Research Engineer, Autodesk

Presentation topic:

Autodesk's industrialized construction research

Magdalena is a research engineer within the Autodesk Research Industry Futures organization and is based in London, UK.

For most of her career, she has worked with customers to develop innovative solutions using cutting-edge design and manufacturing technologies.

Her specialties include part performance optimization through generative design, additive manufacturing technologies, and design for manufacturing and assembly (DfMA) with over a decade of experience working across different industries such as aerospace, automotive, industrial/ tooling, medical, and more.

Currently, Magda's research focus is the Industrialization of Construction, where she's been conducting research on the state of the industry, exploring technologies and trends, and identifying opportunities for innovation and growth within the sector. Her work seeks to apply a wealth of manufacturing expertise to the convergence of manufacturing strategy and construction demands.

In her free time, Magda enjoys watching documentaries and reading books, especially on naval history.

AMY MARKS

VP, Enterprise Transformation Practice, Autodesk

Presentation topic:

Expected experience - changing our view of data, BIM and design make solutions

As Autodesk's VP, Enterprise Transformation Practice, Amy informs strategy on business outcomes, platform solutions, and consulting for customers incorporating transformational methodologies including industrialized construction, sustainability and new ways of working. Prior to joining Autodesk, she defined the language, process and frameworks that are adopted by companies, universities and countries around the world reflecting the convergence of Design-Make-Operate models.

Before joining Autodesk, Ms. Marks was the CEO of XSite Modular and pioneered a path to become the world's preeminent prefabrication consultant and is often called the Queen of Prefab - literally creating the role as the first prefabrication consultant.

Ms. Marks champions the integration of transformational and innovative methods of working across many building types including high-tech, healthcare, hospitality, data centers, residential and commercial buildings.

She has strong relationships across the world with many owners, architects and engineers, and supply chain partners.

She is a unique and outspoken agent for change that is well-respected across many industries and is a highly sought-after keynote speaker and chairperson of conferences on business transformation, prefabrication and sustainability.

She is a mom to her daughter Mackenzie, and also an avid sports fan having played competitive rugby for almost 15 years.

SCOTT MITCHELL

Founder & CEO, STUD-IO

Presentation topic:

Hacking the Howick - Part II

Scott Mitchell is the founder and CEO of STUD-IO, a computational construction company.

Scott works to bridge STUD-IO's software development with its project consulting, enabling some of the most complex projects being built today.

Before founding STUD-IO, Scott worked as a software engineer at Autodesk as part of the AEC Generative Design Group. While working at Autodesk, Scott had access to a Howick roll-forming machine, which he experimented with in his free time, before ultimately leaving to focus on the development of STUD-IO full time.

Scott studies and practices film, music, architecture, and computer science—in other words "making things". He enjoys composing for the guitar, producing videos and animations, and experimenting with software development and fabrication research. Scott teaches at the Sam Fox School of Design & Visual Arts at Washington University in St. Louis.

For the past several years, Scott and his wife Brenna, their son James, and their golden retriever Lou, have lived a modern nomadic lifestyle, living in various cities across the US including: Boston, Massachusetts; Laguna Beach, California; Austin, Texas; and Tulsa, Oklahoma (where Scott was born and raised). Scott and his family currently live in Laguna Beach and are expecting a new member of the family this fall.

AMR RAAFAT

Chief Innovation Officer (CIO), Windover Construction

Presentation topic:

Prefabrication innovations: redefining what is possible to advance the AEC industry

Technology Leader and Expert in the Construction industry's most cutting-edge technologies to streamline projects procurement. With more than 20 years of experience combining architectural, construction, and engineering expertise. In recognition of his pioneering work in Construction Technologies, Amr received the Global 2019 Innovator of the Year award at the Autodesk AEC Excellence Awards.

Amr leads Windover's VDC team and the Innovations for Design, Engineering and Automation, IDEA™ platform providing 4D planning, MEP/BIM coordination, laser scanning, drone mapping, virtual and mixed reality, prefabrication, robotics, additive manufacturing and automation to enhance planning, scheduling, site logistics, and safety throughout all construction phases. Amr received his master's degrees in architecture from the Boston Architectural College.

A fun fact about Amr is that he earned his black belt in karate when he was 16 years old. In his free time, Amr enjoys traveling to historic places with his family. He currently lives with his wife and two young daughters in Lexington, Massachusetts.

JIM STODDART

Research Scientist / Engineer, Autodesk

Presentation topic:

Generative workflows for the industrialization of construction

Jim Stoddart is a Research Scientist in the AEC Industry Futures group within Autodesk Research and a core member of The Living, an Autodesk Studio. His work explores how new design, construction, and material technologies will lead to a better built environment for our planet and its inhabitants.

Jim has collaborated with a wide range of industry leaders to demonstrate the value of new design technologies—including bio-materials, machine learning, and Generative Design—on real-world applications and built projects. Jim has authored several peer-reviewed papers, holds patents for key generative design applications, and contributes articles to industry publications. His design projects have been widely published, won multiple industry design and innovation awards, and have been exhibited at international venues.

Jim lives in Atlanta, GA with his wife and two kids. In his free time, he likes reading books and comics, cooking, and learning new crafts.

RUSSELL WILLS

Director of Plant Operations, MODLOGIQ

Presentation topic:

Setting up a project for success from a manufacturing and erection standpoint

Russ has been in the manufacturing world for the past 20 years from high output production lines to one off custom structural steel fabrications. Of these past 20 years he has spent the last decade in offsite light gauge fabrication. He believes there is always a better, faster, cleaner way to build and he focuses on how to get there.

This is why he has invested the last 10 years into offsite prefab and modular building techniques. From researching automation, visiting plants, and having in depth conversations with companies that use automated production floors to breaking down labor analysis of non-automated factories and everything in between. It is the driving force behind how Russ and his team do what they do, and what separates them in this ever-evolving industry.

Russ uses a hands-on approach to leverage his knowledge and skills to uplift not only his products and their quality, but his employees lives and company culture.

HAMISH COUBRAY

Director, Howick

Presentation topic:

Bridging the interior framing gap: telescopic panels in practice

Hamish Coubray, General Manager of Rollforming Services (RFS) and Director of the Howick Group, of which RFS is the product manufacturing arm, is third generation of the family-owned business.

A mechanical engineer by trade, he has been involved in all aspects of the Howick Group businesses since he was a teen – from machine assembly and manufacture, training, installation and technical support to product development, business development and management.

Hamish's passion for always seeking a better, more efficient way to do something is perfectly suited to the construction industry, where there is so much opportunity to break away from the status quo and do things differently, and more effectively. By asking questions like 'how can we do things better and smarter', Hamish has proven that when you push the boundaries, think creatively, you can consistently deliver a practical, commercially viable, better result.

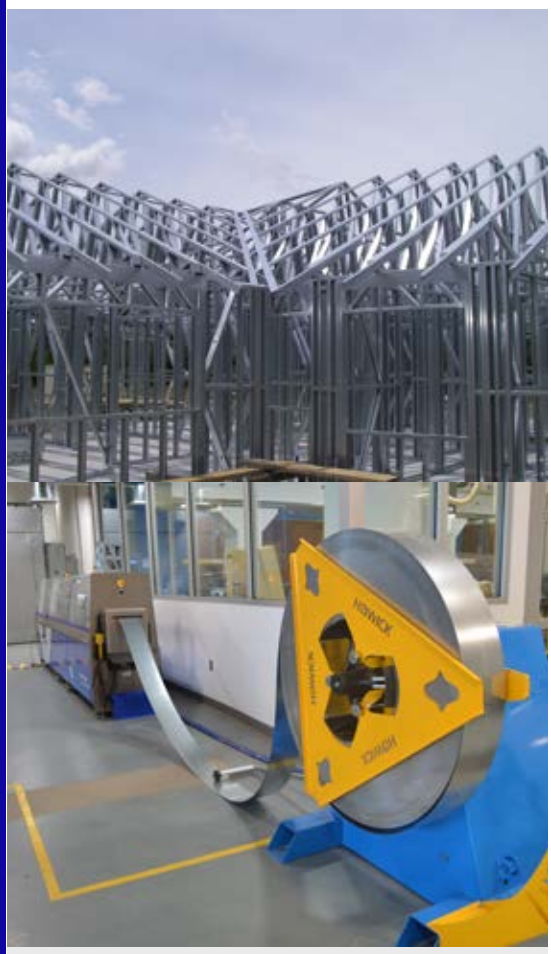
Howick: Pioneering precision light steel roll-forming technology

Howick is a pioneer in precision light steel roll-forming technology. For over 40 years, the company's commitment to innovation in light gauge steel (LGS – also known as cold formed steel), precision manufacturing, uncompromising quality and exemplary customer service has defined the Howick way.

As a manufacturer, over 95% of Howick's products are exported overseas from New Zealand, with the bulk servicing the construction sector in the US, UK, Canada, Ireland and the EU.

The business has been recognized many times over the years, most recently in 2019 as the Export NZ Awards New Zealand mid-sized **Exporter of the Year**.

Howick has enjoyed consistent growth since day one, yet it has seen demand balloon in the last five years or so as the uptake in modern construction methods has exploded to meet the global bottleneck for affordable, quality housing with more efficient, sustainable ways of building.



Looking for more information?

For more information about Howick and Howick's extensive range of light-steel manufacturing systems, visit the Howick **website** or email **Deon Anderson**, Head of Global Sales.

SHAPING THE WORLD OF CONSTRUCTION