



thyssenkrupp

WestonWilliamson+Partners

# THE FUTURE OF METRO STATIONS



## FOREWORD

The world's population is increasing at an unprecedented rate, and as a result cities across the world are growing. With 70 per cent of the global population expected to live in urban areas by 2050, this truly is the century of cities.

Whilst metropolitan life is undoubtedly exciting, the influx of people to urban hubs is putting extraordinary pressure on city infrastructure, and making efficiency and productivity a real challenge. Smart technology has a critical role to play in shaping urban landscapes to ensure that cities of the future are as efficient and sustainable as possible.

Across the world, underground metro networks play a vital role in keeping people – and the cities around them – moving. But with commuter numbers increasing year-on-year, it is of urgent importance that new innovations are implemented in the metro stations within these networks, to help this core service run effectively.

Demand for new innovation is also enhanced by the changing function of metro stations across the world. As people's lifestyles evolve and commuters seek to achieve a better

work/life balance, transport hubs are increasingly being developed into retail and dining locations; places people want to stay in, rather than leave quickly. Add to this the increased connectivity that modern internet technology allows us, and it is clear to see that underground metro stations are quickly becoming key centres of human interaction. Efficient mobility within these hubs is key to delivering a comfortable environment.

We welcome today's panel members, who – using the London Underground network as an example – will be discussing the challenges facing underground metro stations and solutions for inner-city transport which will save time and improve commuter experience.

We are also proud to present the world's first rope-less elevator technology MULTI\* as a possible solution to help optimize mobility and efficiency in both the metro system here, and other urban hubs across the world.



**Andreas Schierenbeck**  
Chief Executive Officer  
thyssenKrupp Elevator

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*Underground stations are quickly becoming key centres of human interaction*  
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\*More details on thyssenKrupp Elevator's MULTI technology can be found on page 10.

## URBANISATION AND LONDON'S METRO STATIONS

As one of the world's oldest and most influential cities, London is a highly sought-after destination and an increasingly popular place to live. In March 2015 London reached a record population of 8.6 million people. With this figure expected to reach nearly 10 million within the next eight years, the operational feasibility of the city's key services are being drawn into the spotlight and measured to gauge their ability to accommodate this growth.

The London Underground network is an integral part of the capital, but its metro stations are feeling the strain from the rapidly increasing commuter numbers.

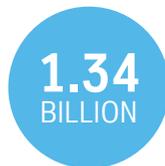
Urbanisation won't slow down, and the onus is on city planners and developers to think now about what the city will look like in 15, 30, or even 50 years' time; to make plans and implement solutions that will ease the pressure on what is undoubtedly one of our country's most iconic services and help set London up for a sustainable future.



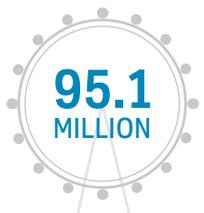
The London Underground network has been an integral part of London's history for 150 years



Total length of the London Underground network



Average annual passengers on the Underground network



Annual passengers at London's busiest station, Waterloo

Across the London Underground network there are:



**167**  
Elevators



**430**  
Escalators



**4**  
Moving Walkways

In the period April 2014 – March 2015, **more than 1.3 billion passenger journeys** were made on the Tube; **an increase of 3.2 per cent** on the previous year\*

\* data provided by TfL

## BIOGRAPHIES



**Mark Hansford** is Editor of New Civil Engineer (NCE), a role in which he is responsible for driving content across all NCE's activities and the development of new digital and event products.

NCE's remit is simple: to help professional engineers become better by providing thought-provoking and inspiring content around future technologies and technical excellence. Mark is expertly placed to lead that agenda, with 20 years' civil engineering industry experience, first as a practicing, qualified engineer and then as an award winning journalist with NCE.

Mark has a First Class MEng in Civil Engineering from the University of Birmingham and spent three years as a practicing engineer with leading consultant Atkins before joining NCE in 2000.

Mark has reported from the scene of a host of international engineering disasters including a bridge collapse in northern Portugal, a tunnel fire in Baltimore and tsunami-struck Sri Lanka. In 2003 he was the first construction reporter into Iraq following the second Gulf War; a job that earned him various awards including IBP National News Reporter of the Year 2003 and IBP Construction and Infrastructure Writer of the Year 2013.

Mark is also a member of the ICE Awards committee, the International Building Press board of management and is a judge of numerous industry awards including the British Construction Industry Awards, International Tunnelling Awards and NCE/ACE Consultants of the Year Awards.

[newcivilengineer.com](http://newcivilengineer.com)

## BIOGRAPHIES



**Andreas Schierenbeck** has been CEO at thyssenkrupp Elevator since January 2013, following his appointment

as member and Vice Chairman of the Executive Board of thyssenkrupp Elevator AG in 2012.

Andreas studied electrical engineering at Dresden University of Technology and after completing his studies, began his career as a control center software developer, followed by positions in commissioning, as a project manager and in business development at Siemens AG in Vienna, Austria. In this role he spent two years in Colombia and Venezuela.

On his return to the Austrian capital, Andreas was tasked with restructuring a software company acquired by Siemens, and following the successful completion of this project, he performed further duties in control center technology. In 2005 he took up new challenges and joined the Building Technologies Division, initially as Senior Vice President for Fire Services.

From 2006 to 2010 Andreas served as CEO for the Building Automation business unit in Zug, Switzerland, having spent six years as President and CEO of Building Technologies Americas at Siemens Corporation in the USA prior to this.

[thyssenkrupp-elevator.com](http://thyssenkrupp-elevator.com)



**Chris Williamson** formed architectural practice Weston Williamson + Partners with Andrew Weston in 1985. At the firm

he is responsible for Design Management ensuring that all projects are properly resourced and all work is completed to the highest standards in a collaborative studio culture. Chris is also leading the Weston Williamson initiative to promote transport oriented development which pins together all the various strands of the company's work.

Prior to Weston Williamson + Partners, Chris worked for Welton Beckett, New York before joining & Michael Hopkins. He has taught at DeMontford University and the University of North London, and is currently a visiting professor at East London University and a member of the Southwark Design Review Panel.

Chris has a Master's degree in Project Management and is also a qualified urban designer and a member of the Royal Town Planning Institute (RTPI). He has acted as an expert witness for Transport and Works Act (TWA) and Planning enquiries and is currently a member of Royal Institute of British Architects (RIBA) Council, chair of the RIBA Competitions Review Panel, sits on the International Committee and is the RIBA Business Skills Ambassador.

Chris's research and thought leadership has been published by the RIBA Journal and Urban Design International, amongst other outlets. Chris' accreditations and qualifications include RIBA / RPTI / MAPM / BA Arch Hons / Dip Arch / MA Urban Design. MSC Project Management.

[westonwilliamson.com](http://westonwilliamson.com)

## BIOGRAPHIES



**Lauren Sager Weinstein** has responsibility for the analysis of customer data, supporting operational and planning areas in delivery of services to TfL's customers.

She joined TfL in 2002, where she has held a variety of roles - Senior Business Planner, Acting Head of Finance for London's Transport Museum, Chief of Staff to the Managing Director of Finance & Planning and the Head of Oyster Development.

During her time at TfL, Lauren has worked on a number of projects: the establishment of TfL's first long-term funding package for infrastructure investment; the development of the Oyster system; the launch of contactless payment card acceptance on TfL's buses; and the successful delivery of the London 2012 Olympics by providing analysis on travel patterns.

Originally from Washington, DC, USA, she has degrees from Princeton University and from the Harvard Kennedy School of Government.

[tfl.gov.uk](http://tfl.gov.uk)



**Baroness Jo Valentine** joined London First in 1997 as Managing Director, becoming Chief Executive in 2003. Her role centres on representing to national and local government the most pressing issues affecting London's leading businesses.

Since beginning her career in corporate finance at Barings, Jo Valentine has worked in industry, and in regeneration and public policy roles. She is a Non-

Executive Director of Peabody and High Speed 2 and a Council member of UCL.

Jo became a Crossbench Peer in October 2005 and sits on the House of Lords Committee which provides pre-legislative scrutiny of European infrastructure and employment proposals.

She is an Honorary Fellow of St Hugh's College, Oxford and Birkbeck, and holds honorary degrees from Roehampton University and the University of London.

[londonfirst.co.uk](http://londonfirst.co.uk)



**Richard de Cani** Richard leads the Planning business for the UKMEA region of Arup - a multinational firm

providing engineering, design, planning, project management and consulting services for all aspects of the built environment. As a qualified town planner and transport planner, he brings over 23 years' experience of all aspects of planning, particularly those relating to the management and development of transport and infrastructure in cities and urban areas.

Having started as a graduate at Arup, Richard recently re-joined from Transport for London (TfL) where he worked as a variety of different roles; most recently Managing Director of Planning, where he reported to the Commissioner of Transport for TfL and was responsible for developing the strategic transport plans for London and delivering the transport priorities of the Mayor.

[arup.com](http://arup.com)



**Rachel Skinner** is the UK Director of Marketing & Communications at WSP Parsons Brinckerhoff,

the current President of the Women's Transportation Seminar (WTS) in London, and also the Chair of the Institution of Civil Engineers (ICE) in London.

Rachel's career started in a graduate Transportation Planning role, before moving into leadership for the wider team.

Rachel has undertaken strategic roles for various projects, ranging from major multi-disciplinary highway schemes to specialist advisory roles on niche and complex transportation projects. A chartered engineer, Rachel is also an active Supervising Civil Engineer and mentor for those seeking professional accreditation through the ICE, the Chartered Institute of Highways and Transportation (CIHT) and/or Transportation Planning Professional (TPP) routes.

[wsp-pb.com](http://wsp-pb.com)

## IMPROVING MOBILITY AND EFFICIENCY IN METRO STATIONS – MULTI

thyssenkrupp Elevator's MULTI technology is a potential innovation that could help improve efficiency and mobility within our underground metro stations. As the world's first horizontal/vertical 'Willy Wonka' lift system, MULTI is facilitating new directions for elevators and providing architects and city planners with a whole host of new design possibilities.

MULTI breaks the 160-year tradition of lifts with ropes and allows multiple cabins to move within the same elevator shaft both vertically and horizontally. The technology is a first for the industry and will deliver multiple benefits, including:

- Shorter waiting times
- Significantly increased capacity
- A smaller elevator footprint within the building
- Opens up a variety of design possibilities in increasingly complex architectural plans

Whilst elevators are often overlooked within our cities, the increasing demand of rising populations and ever-heightening buildings puts them at the very core of our future built environment. There are 12 million elevators worldwide that transport more than a billion people each day.

Applied to the global transport sector, and London in particular, MULTI has vast potential to transform the way metro stations are designed and built in our cities; delivering multiple benefits including greater underground capacity and efficiency, as well as shorter commuter times for passengers.

More information on MULTI, including a video showcasing its potential in underground metro stations, can be found here:

[multi.thyssenkrupp-elevator.com/en](https://multi.thyssenkrupp-elevator.com/en)

As another example of innovative mobility solutions to create smart cities of the future, thyssenkrupp Elevator has also developed MAX – an IoT driven predictive maintenance technology that uses a Cloud-based algorithm to ensure optimum elevator availability and make getting stuck in a lift a thing of the past.

More information can be found here:

[max.thyssenrupp-elevator.com.en](https://max.thyssenrupp-elevator.com.en)



[thyssenkrupp-elevator.co.uk](http://thyssenkrupp-elevator.co.uk)  
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[urban-hub.com](http://urban-hub.com)



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