







# **NEC Asia Pacific Users' Group Conference 2013**

The impact of collaborative contracting

25 NOVEMBER | SHERATON HOTEL, HONG KONG





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#### **NEC Asia-Pacific Users' Group Conference**

25 November 2013, Hong Kong

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Mott MacDonald Group is a diverse management, engineering and development consultancy delivering one-stop solutions for public and private client's world-wide. With over 50 years' experience in Hong Kong, we have been commissioned by the Government since 2011 to support its NEC trial in procuring a total of 11 pilot contracts.

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#### **TKR Consultancy**

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With over 20 years' experience across a wide range of sectors in the UK and Hong Kong, TKR Consultancy Ltd specialise in providing NEC contract advice and training, project and cost management services. Tim Knee-Robinson has successfully delivered over 30 NEC projects and advised on numerous others in the UK and Hong Kong. This includes being the NEC Advisor on the Fuk Man Road nullah project, DSD's pilot project and providing NEC advice and training to ASD, HYD, DSD and CLP Power Hong Kong Ltd.

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#### **EC Harris**

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EC Harris is a leading international Built Asset Consultancy with over 3,000 employees in 28 countries and is a member of ARCADIS, a 22,000 strong global Consultancy. EC Harris has been instrumental in the development of NEC within the region and has been engaged with over 3,500 NEC Projects worldwide

www.echarris.com



Dear delegates,

Welcome to the NEC Asia-Pacific Users' Group Conference 2013!

Following on from the hugely successful inaugural conference we ran last year on the 21 November 2012 which demonstrated how NEC is being adopted across Asia-Pacific's construction industry, we are looking forward to hearing how things have progressed in that time and how other sectors are beginning to use members of the NEC3 family.

We have aimed to exceed the success of last year's conference by offering a robust programme of presentations, workshops and panel sessions designed to deepen your knowledge of NEC and clarify how we can work together to establish NEC as the standard form of contract in the Asia-Pacific region. The programme has been carefully put together in consultation with users in the region to ensure that it delivers the knowledge and information most sought after by the NEC community in the region I would like to take this opportunity to extend my special thanks to our Users' Group chairman and secretary, speakers, facilitators, sponsors and supporters who make these annual conferences possible and continue to support NEC activities in the region.

The NEC Asia-Pacific Users' Group has been enjoying a steady growth since it was established in 2010 and now has over 40 organisations as members. If you are interested in registering your organisation to join the NEC Asia-Pacific Users' Group, please either speak to myself or Daniel Celino; we have supplied an application form in this delegate pack which you can complete and hand in at the end of the conference.

Please take advantage of the refreshment breaks by networking with fellow NEC users as well as visiting our exhibitors Pinsent Masons, EC Harris, Mott MacDonald and the joint NEC/APM stand.

We are keen to continually engage with our members, so please remember to stay in touch with us via our Linkedin Group or twitter feed @nec\_contracts.

I trust you find this conference interesting and beneficial and I look forward to working with you all in the future.

Kind regards

Rekha Thawrani

**NEC General Manager** 



#### Dear Colleague

As Chairman for the NEC Asia- Pacific Users' Group, I am delighted to be attending the 2013 Asia Pacific Users' Group Conference which follows the huge success of last year's inaugural event.

The collaborative partnering, dispute avoidance and cost-effectiveness that NEC3 contracts bring to a project are becoming more and more recognised in Hong Kong as essential for successful procurement. The application of the contracts in large scale and complex projects such as the Fuk Man Road Nullah Project, the Happy Valley Storm Water Drainage Scheme and the on-going CLP Transmission Substation Programme clearly reflect the growing interest in NEC3 across the region and are indicative of the movement of NEC3 towards becoming the standard form of public sector contract.

With a keynote presentation from CS Wai of the Development Bureau, followed by experts from other key industry sectors including law, consultancy and construction, this year's conference will not only look at how NEC3 has been adopted so widely in our region, but also why this is the case.

Through a combination of presentations, workshops and panel discussion, you will have the opportunity to listen and interact with high profile NEC and industry experts about the benefits of using, and future plans for NEC3. Moreover, you will come away from the day with clarity on how the NEC3 suite can be successfully adopted and adapted for your projects.

I look forward to speaking with as many of you as possible today.

Best regards

TC Chew

NEC Asia Pacific Users' Group Chairman

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### **Programme**

08:00 – 09:00 Registration

09:00 - 09:15

#### TC Chew, NEC Asia Pacific Users' Group Chairman

Welcome and Introductions

09:15 - 09:40

#### C S Wai, Permanent Secretary for Development, Development Bureau Keynote speech:

- Response to NEC usage in Hong Kong
- Establishing NEC as the standard form of contract
- NEC Challenges; looking to the future
- Questions from the audience

09:40 - 10:20

#### Ken Ko, General Manager, Chun Wo Construction

- Looking at Fuk Man Road Nullah project from a Contractors perspective
- How NEC principles increases efficiency of project management
- Understanding how NEC has met needs of industry
- Questions from the audience

10:20 - 11:00

#### Tim Knee-Robinson, TKR Consultancy LTD Andrew Chan, CLP Power Hong Kong

- Implementing NEC Contracts in consultant agreements
- CLP transmission substation: showcasing the use of ECC Option B & D
- How NEC achieves quality project management and cost-effectiveness
- · Questions from the audience

11:00 - 11:30

Morning coffee and networking

11:30 - 12:05

#### Tsui Wai, Deputy Director, Drainage Services Department

- Update on Happy Valley Storm Water Drainage Scheme
- How has NEC gained wider recognition in construction industry
- Preparing for more NEC projects in the near future
- Questions from the audience

12:05 - 12:40

#### Lee Askey, Commercial Leader, Laing O'Rourke

- Fostering a working relationship between the Government and the Contractor
- Collaborative Partnering; Reducing contractual disputes
- Application of NEC in both UK and HK marketplaces
- Questions from the audience

12:40 - 13:15

- Legal interpretation and NEC
- Court decisions considering NEC
- Best practice in preparing NEC contract documents
- Questions from the audience

13:15 – 14:00 Lunch

14:00 - 15:30

#### Workshops

#### Pinsent Masons – Understanding the Professional Service Contract (PSC)

- A closer look at the provisions of the PSC
- Applying the PSC in your projects
- The PSC in Hong Kong current and future use

#### EC Harris - Application of the Term Service Contract (TSC) in the Hong Kong marketplace

- Who is using the TSC in Hong Kong?
- · Approaches and options adopted
- Future developments of the TSC

#### Mott MacDonald - Best practice in managing compensation events

- What are compensation events?
- · Identifying the difference and interaction between early warnings and compensation events
- Practical tips

15:30 – 16:00 Coffee and networking

16:00 - 17:00

#### **Panel Session**

Drawing experts from across law and government, this session will provide a forum for understanding how NEC3 facilitates effective dispute avoidance/resolution within the legislative framework of the Hong Kong SAR, and the importance of this for successful project management.

#### Chair:

Hayman Choi, Mott MacDonald

Peter Clayton, Pinsent Masons

Mike Allen, EC Harris

Christopher To, Construction Industry Council

17:00 - 17:15

TC Chew, NEC Asia Pacific Users' Group Chairman

Closing remarks

17:15 - 18:45

Cocktail reception





TC Chew
Projects Director,
Hong Kong MTR Corporation;
President,
NEC Asia Pacific Users' Group

TC Chew is the Projects Director of Hong Kong MTR Corporation Limited. TC has worked in the rail transit industry in the United Kingdom, Singapore, Hong Kong and overseas for over 40 years. He has held senior position in both contractor and client based organizations on rail projects implementation over the last 20 years.

He is currently a member of the Hong Kong Construction Industry Council. He is a Chartered Engineer, a fellow of the Royal Academy of Engineering Sciences and number of professional institutions in the United Kingdom and Hong Kong.







CS Wai
Permanent Secretary for
Development (Works)
Development Bureau

Ir Wai Chi-sing obtained his first degree in civil engineering from the University of Hong Kong, and his master degree in transportation engineering from the Purdue University in the United States. He has professional qualifications in civil, structural and geotechnical engineering.

Ir Wai joined the Hong Kong Government as an Assistant Engineer in August 1980, and since then his career has been closely associated with the development of Hong Kong's infrastructure. He has served in the Transport Department, the former Territory Development Department, the Highways Department, and the Works Branch of the former Environment, Transport and Works Bureau. He was the Director of the Highways Department from November 2006 to June 2010 and has been appointed Permanent Secretary for Development (Works) since June 2010.







Tsui Wai
Deputy Director of Drainage Services
Drainage Services Department

Mr TSUI graduated from the University of Hong Kong. After having worked in a consultancy firm for several years and obtained his professional qualification, Mr TSUI joined the Civil Engineering Department of the Government of Hong Kong in 1981. Since then, he had worked in various positions, responsible mainly for the design and construction of major infrastructure projects, including marine structures, reclamation, new town development and highways.

He also spent several years in the Works Bureau, in which policies of public works in Hong Kong were formulated and carried forward. He is currently the Deputy Director of Drainage Services Department, responsible for the development and implementation of capital works projects, operation and maintenance of drainage and flood control facilities, sewerage system and sewerage treatment plant.







Ken, Ko Wing Nin General Manager (Construction) Chun Wo Group

Ken is a Chartered Civil Engineer. He is a Member of Institution of Civil Engineers and the Hong Kong Institution of Engineers.

He has 27 years of experience in the construction industry including civil, building, foundation, marine engineering and P-Way projects in Hong Kong, Macau and UAE.

He is currently Division Head of Chun Wo Group to take charge of special projects and P-Way subsidiary. He is also the project leader of 3 Government NEC3 ECC projects.







T Knee-Robinson
Managing Director
TKR Consultancy Ltd

Tim is a chartered civil engineer and NEC specialist with over 20 years of project experience across a wide range of sectors including civil engineering, highway infrastructure, waste water, energy and building. Tim has experience of working for contractors, clients and consultants and recently established his own independent company focused on providing NEC and project management consultancy services.

Tim has over 10 years of experience successfully delivering NEC procured projects. This includes acting as Project Manager / Supervisor and providing NEC consultancy services and training on numerous projects in the UK and Hong Kong. Tim has also delivered over 200 training courses on numerous projects in the UK and Hong Kong, including Manchester City Councils' £154m (HK\$1.85bn) Town Hall Complex Transformation Programme and developed the training material for the £15bn (HK\$180bn) Crossrail project, the largest NEC procured project in the world.

Tim was the NEC Adviser on DSD's Fuk Man Road nullah pilot project and is currently advising CLP Power Hong Kong Ltd on their Transmission Substation Programme and HyD on a highway noise barrier project. Tim has also provided advice and training to a number of organizations in Hong Kong including ASD, HyD, APM, Chun Wo, Yau Lee, Atkins, Aecom and Mannings (Asia) Consultants Ltd.

Tim has extensive experience of preparing NEC contracts including developing a Works Information structure which formed the basis of all the contracts used on the 2012 Olympics. Furthermore, Tim was a major contributor to the NEC's How to write ECC Works Information guidance published in April 2013. This guidance includes a model structure based on the one conceived by Tim.







Ir Andrew Chan
Senior Project Engineer,
CLP Power Hong Kong Ltd

Ir Andrew Chan obtained his degree in civil engineering from the University of London – King's College in the UK. He possesses professional qualification in civil engineering in Hong Kong.

Ir Chan joined CLP Power Hong Kong Ltd (CLP) in 2008 as a Section Head of Civil Construction in Engineering Projects Department to deliver the civil works projects related to power transmission in Hong Kong, such as the proposed substations, cable tunnels and high voltage tower strengthening works.

Before CLP, Ir Chan worked for the railway sectors for thirteen years in Kong Kong, gaining an extensive construction management experience of railway infrastructures including railway stations and tunnels.







Lee Askey Commercial Leader Laing O'Rourke

Kier Laing O'Rourke Kaden JV

C901 Admiralty Integrated Station & SCL Enabling Works

#### **Overview**

Lee Askey obtained his BSc in Quantity Surveying at Salford University, England and is a Member of the Chartered Institute of Builders

Lee has held a number of various roles including commercial, bid and framework management. His extensive experience of the NEC spans back to 1998, where he was the project QS on one of the first NHS projects to pilot NEC. Since then he has been involved with national and regional frameworks across the UK that include projects in the health, education, sport and leisure, infrastructure and community sectors. All of which have been delivered successfully using various forms of NEC.

He has been working in Hong Kong for two years and is currently the Commercial Leader for the Kier Laing O'Rourke Joint Venture on the MTR's C901 Admiralty integrated station and SCL enabling works, part of the new South Island Line development.







Peter Clayton
Partner
Pinsent Masons

Peter is a partner in Pinsent Masons' Construction team. He lives and works in Hong Kong. He has extensive experience of advising and representing clients on NEC contracts both in Hong Kong and in the UK. He is currently advising the Hong Kong Government on preparation of contract documents for two pilot NEC PSC projects.

Peter has also acted on a number of disputes and adjudications arising on NEC contracts in the UK where he worked for Pinsent Masons for 16 years prior to transferring to Hong Kong. Peter also advised and represented a contractor on its successful tender for a major framework contract for the 2012 Olympics.

Peter's transactional and dispute resolution experience extends well beyond the NEC form. He is currently advising the Hong Kong Government on the planned introduction of security of payment legislation which will introduce improved payment practices and provide a right for disputes to be resolved by adjudication.

Peter regularly lectures on a variety of construction related topics including providing training on the NEC to a variety of clients, for the NEC in Hong Kong, the Royal Institute of Chartered Surveyors in the UK and for the Hong Kong Construction Association. He is a Fellow of the Chartered Institution of Civil Engineering Surveyors in Hong Kong.







Tony Kwok Associate, EC Harris

Tony is a Chartered Quantity Surveyor with over 7 years' experience. He has had exposure to a variety of projects spanning across different sectors, which includes Aviation, Water, Corporate Real Estate and Infrastructure over the last 7 years.

Having worked under a variety of procurement strategies he now has a focus on providing contractual advice and assistance in contentious quantum disputes. He is part of a specialist team in Hong Kong, which provides strategic procurement and contract advice, dispute management services and NEC consultancy services

In the UK, he has been involved in the preparation of NEC contract documents under various Main Options for BAA's capital projects predominantly involving the use of ECC and PSC. He also specialises on the development and application of the innovative forensic cost assurance services including independent cost accounting and auditing exercises. Locally he has been involved in over 20 NEC projects providing NEC advice to Government Works Departments, CLP and HKJC. Tony has delivered numerous public seminars, trainings and workshops on the NEC for employer organisations, contractors, consultant firms and professional institutions.







Richard Patterson
NEC and Procurement
Specialist, Lead WNE Procurement Practice,
Mott MacDonald

Richard Patterson, BA MBA CEng MICE is a chartered civil engineer and procurement and NEC specialist with global development, engineering and management consultant, Mott MacDonald.

He has had more than 21 years' experience with Mott MacDonald in the UK and in Australia, Bahamas, Bangladesh, Botswana, Ethiopia, Hong Kong, Lesotho, New Zealand, Pakistan, Romania, Russia, St Kitts and Nevis, Turkey and Vietnam. Much of the international work has been on bank funded projects, often using FIDIC forms of contract.

Richard advised on possibly Mott MacDonald's first use of the NEC when he moved to their procurement team in 1996 and has worked with the NEC ever since. He supports internal teams and their clients in all sectors from the Halley VI research station on the Antarctic, Transnet in South Africa, to the Jumeriah Golf Estates in Dubai. In Hong Kong, he has supported Hayman Choi's Mott MacDonald NEC team on its commissions advising various departments of the Government of Hong Kong on their trial projects using NEC.

Back in 2007-2008, he was 'let out' by Mott MacDonald and carried out training and consultancy directly for NEC, including roadshows and Users' Group events across the UK and in Australia and New Zealand.

Back with Mott MacDonald, he continues to support clients in all sectors and across the world on the use of the NEC, providing guidance and varied and extensive training as required. Through Mott MacDonald he continues to deliver training for NEC publisher, ice publishing.

Richard is a frequent contributor to the NEC Newsletter, has had NEC papers published in ICE's Proceedings and sits on the Editorial Advisory Panel of the ICE's journal, Management, Procurement and Law. The most recent paper was on the potential to use NEC for design, build, operate (DBO) contracts.

For NEC publications see:

http://uk.linkedin.com/in/coolsoberandsmiling







Ivan Cheung
Partner,
EC Harris

Ivan is a Chartered Quantity Survey or with over 20 years' experience. He leads a specialist team based in Hong Kong to provide strategic procurement and contract advice, dispute management services and NEC consultancy services. Since 2006, he shared cross border experience from the UK and has been involved in over 20 NEC projects for Government Works Departments, CLP and HKJC in Hong Kong. He has given numerous well-received public seminars and in-house training workshops on NEC to employer organisations, contractors, consultant firms and professional institutions. Being an active NEC specialist and Users' Group member, he has been appointed by the CIC as a committee member of its NEC Task Force and has been appointed by the NEC to be the Secretary of Asia Pacific Users' Group from July 2012.

Ivan also practises as Arbitrator, Adjudicator, Mediator, Dispute Resolution Advisor and Expert Witness to facilitate resolution of construction and engineering disputes. He is a practicing member of the Academy of Experts, a practising general mediator accredited by the HKIAC, a member of the HKIAC's Panel of Adjudicators, a member of the HKIAC's List of Arbitrators and a member of the HKIS-HKIA Joint Panel of Arbitrators. Since 1999, he has specialised in providing expert services for construction and engineering project disputes. His specific experience has included the provision of contract advice, acting as technical adviser on contractual and quantum issues and the preparation of expert reports and giving evidence at hearings on quantum issues for the purpose of arbitration or court proceedings on numerous construction and engineering disputes. He has acted as Arbitrator in several construction disputes as has been appointed as Adjudicator through HKIAC's nomination. He has been appointed as Mediator on a variety of commercial disputes either directly by the parties, through recommendations by the parties' legal representatives or by HKIAC's nomination.

Ivan held various committee memberships including being the chairman of the construction group and council member of the Hong Kong Mediation Council, a sub-division of the HKIAC, promoting the development and use of mediation as an alternative dispute resolution forum in Hong Kong. He is an experienced trainer in the field of construction contracts, dispute management and mediation. He has been appointed as part-time teacher / guest lecturer on the mediation practice course with a number of institutions including the HKU SPACE, University of Hong Kong, City University of Hong Kong and Hong Kong Polytechnic University.







Mike Allen
Head of Contract Solutions – Partner,
EC Harris
BSc, FRICS, MHKIS, MCIArb, FACostE, FAE

Mike is a Chartered Quantity Surveyor and partner with EC Harris, he is also the Group Head of Contract Solutions, which is a specialist team within EC Harris of 130 professionals based in Europe, the Middle East and Asia. He has extensive experience in procurement and contract strategy, dispute resolution and providing strategic advice to clients on distressed or problem projects. Mike has over 25 years' international experience in the construction industry, with over 18 years' experience in the use of NEC. He has worked on over 30 NEC projects since 1994. Since 2006 he has been involved in various projects for HK Government Departments and private clients.

In addition to working on many construction projects, Mike continues to work on numerous disputes and live projects for Employers, Contractors and Subcontractors. He provides contract advice, has prepared claims and rebuttals, assisted in negotiations and appeared in many different tribunals.

His experience bridges a range of sectors from Major High Rise Developments, Infrastructure, Highways, Port Redevelopment, LNG plants, Power Plants and related facilities, Leisure Complexes, High Speed Rail, Airport facilities, Water and Waste Water Treatment Process Plants.

He has been appointed as a Quantum Expert Witness on a number of construction disputes, acting for both Claimant and Respondent, working with major firms of solicitors and barristers. He has given evidence in the High Court twice and in domestic and international Arbitrations on seven occasions, as well as in numerous Mediations and Conciliations. Mike is also a CEDR accredited mediator.

Mike has been involved in drafting a paper on behalf of the British Chamber of Commerce Construction Interest Group on strategic procurement and the implementation of NEC in HK. He has also presented papers and chaired workshops including contract selection, Partnering, NEC dispute resolution and risk management.







Hayman Choi
Divisional Director
Mott MacDonald
BSc (Hons.), MBA,
MHKIS, MRICS, RPS(QS)

Hayman is a Chartered Quantity Surveyor with over 22 years' experience in all ranges of pre- and post-contract quantity surveying services. He is currently a Divisional Director with Mott MacDonald and the Director of Franklin & Andrews (Hong Kong) Limited as a subsidiary arm of Mott MacDonald providing consultant quantity surveying services.

Prior to joining Mott MacDonald in 1997, Hayman worked in contractor's practice with considerable exposure to contractual extension of time and financial claims and had involved in a litigation in the early years of his career. Since 2000 he has been in charge of the Quantity Surveying Section within Mott MacDonald whilst in parallel performing the role of Contract Advisor providing professional support on, amongst other contract-related matters, resolution of disputes with some of which involving mediation, adjudication and arbitration. He is particularly experienced in contract procurement and administration of civil and infrastructure projects in Hong Kong using traditional Employer/Engineer led design, design and build, term contract and design, build and operate approaches respectively.

Hayman has developed himself from specializing the use of traditional government forms of contract to become the lead of Mott MacDonald in supporting the Government to pioneer the NEC trial in contract procurement. Up to November 2013, he has led Mott MacDonald to work for five works departments under a total of 11 pilot NEC projects covering the use of Engineering and Construction Contract and Term Service Contract including target and lump sum options with varying degree of contractor's design. He has also provided training on NEC to the Government and contractors under these pilot NEC projects.







Stuart Bromley
Managing Director
Mott MacDonald Hong
Kong Limited

Stuart Bromley is the Managing Director of Mott MacDonald in Hong Kong and has been involved with major projects here over the last 4 years.

Stuart has worked for Mott MacDonald for over 33 years, during which time he has worked on their projects worldwide, including 10 years in each of Africa and the Middle East as well as periods in Asia, Australasia, the Caribbean and Europe. Stuart has acted as the representative of both the World Bank and the European Union in a technical and contract advisory capacity.

With regard to the NEC form of Contract, Stuart was co-writer of the first major UK Highways Agency project to use the NEC (A303 Stonehenge Tunnel) and is a firm advocate of the type of collaborative working it aims to achieve.







Christopher To
Executive Director
Construction Industry Council

Christopher To is the Executive Director of the Construction Industry Council, a statutory body in Hong Kong tasked among other functions to advise and make recommendations to the Government on strategic matters, major policies and legislative proposals, that may affect or are connected with the construction industry, and on matters of concern to the construction industry.

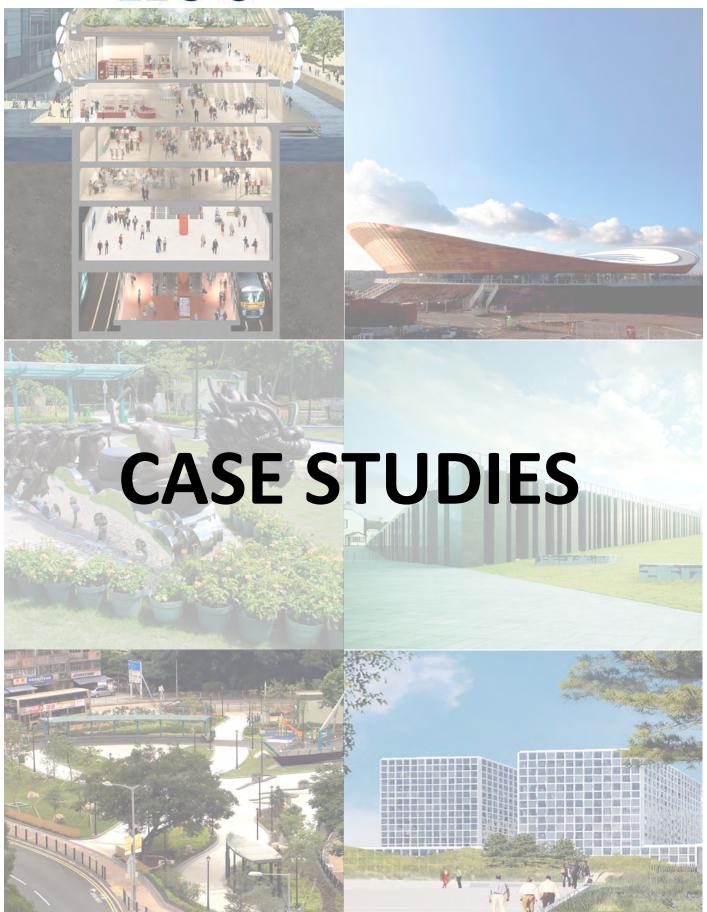
As former Secretary-General of the Hong Kong International Arbitration Centre, he managed to elevate Hong Kong's status as the regional dispute resolution hub of Asia by increasing the number of international dispute cases being referred to Hong Kong for amiable resolution as well as creating the Asian Domain Name Dispute Resolution Centre, a body that has gain international prominence within the dot.com community as a reliable, trustworthy, independent and reputable entity that manages domain name disputes. In recognition of his outstanding leadership and his contribution to the community, in 2001 he was honored as the youngest Director of the Year in Hong Kong and in 2007 he was honored as a Young Global Leader by the World Economic Forum.

In 2004, he was named as a Director and Chairman of the Hong Kong Internet Registration Corporation Limited, a company tasked with over-seeing the operations of the .hk domain name register and was elected by the Internet community to serve on the Nominating Committee of the Internet Corporation for Assigned Names and Numbers, a not-for-profit partnership of people from all over the world dedicated to keeping the Internet secure, stable and interoperable.

Christopher holds qualifications in computing, engineering and law. He is a recognized authority on alternative dispute resolution techniques and is a sought-after speaker/moderator at international forums. He holds Adjunct Professorships from leading Universities and is on the board of various organisations ranging from education to research and development.



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#### FUK MAN ROAD NULLAH PROJECT



Location: Sai Kung, Hong Kong

Value: 6 million pounds

Contract used: ECC Option C

Start-finish: August 2009 – May 2012

Employer: Drainage Services Department, the Government of Hong Kong Special

Administrative Region

Contractor: Chun Wo Construction & Engineering Co., Ltd

Project Manager: Chief Engineer/Drainage Projects, Drainage Services Department

The HK \$76 million Fuk Man Road nullah improvement project was designed to improve the local environment of Sai Kung town, known to many as the back garden of Hong Kong. It involved decking over an existing 180 m long 12 m wide open nullah, constructing a  $4000 \ m^2$  urban park over the top and upgrading an adjacent roundabout. The marine-themed park includes water-drop-shaped seating, a 30 m long play ship and an 8 m long brass and stainless steel dragon-boat sculpture weighing 3 t.

#### Pilot project for government

In 2001, the Hong Kong government's construction industry review committee recommended a wider adoption of partnering and the integration of a partnering approach in contractual relationships, with the aim of avoiding disputes and achieving better project delivery. In response the government's Development Bureau decided to try out non-contractual partnering in public works projects. In 2006, the Development Bureau chose to trial the NEC3 Engineering and Construction Contract as a form of

contract embracing partnering spirit. The Fuk Man Road project was selected for the first NEC pilot project and the contract was awarded in 2009.

#### Partnering workshop and training

According to senior engineer Anthony Tsang, the project team adopted a number of measures to make NEC work. First, a partnering workshop and NEC practical training sessions were arranged for the Drainage Services Department, the consultants and the contractor at the beginning of the contract.

He said these were designed to bring about a change in mindset, from a traditional adversarial to a partnering approach, and to ensure a common understanding of the NEC contract conditions.

Secondly, the Drainage Services Department engaged an NEC adviser to guide the project team throughout the project to work with a partnering spirit and to comply with the contract requirements.

#### **Co-location of project team**

A common office was adopted for the project so that the project manager, the supervisor (the consultants) and the contractor could sit side by side to facilitate more effective daily communications. *This was an unusual arrangement for government contracts in Hong Kong,* says Tsang. Throughout the project, regular meetings among senior management of the three parties were held to monitor performance and jointly solve problems as they arose. *With such good relationship established, the project team arranged joint functions, such as public relations events, a joint charity team and even a dragon boat race team.* 

#### **Benefits of NEC3**

- Fostered the creation of a project team with a partnering spirit and collaborative working culture.
- Resulted in high job satisfaction of staff working on the project, which differed quite significantly to other government contracts in terms of working culture.
- Early warnings and pain / gain share promoted joint and prompt problem solving.
- Significant cost and time savings were achieved: the project was completed six months ahead of its 39 month programme and 5% below final target cost.

CLP Power Hong Kong Ltd 132kV Transmission Substations Civil Works Contract



Tuen Mun, Tseung Kwan O and

Locations: Cheung Sha Wan area in Hong Kong

Contracts used: ECC Options B and D Start-finish: Nov 2012 - May 2014

Employer: CLP Power Hong Kong Ltd
Contractor: Hip Hing Construction Co Ltd.

Project manager: Senior Project Engineer, Engineering Projects

Department of CLP Power Hong Kong Ltd

CLP Power Hong Kong Limited (CLP) has constructed a number of substations in recent years to enhance its power supply system in order to meet the increasing electricity demand and infrastructure development in Hong Kong. The construction of three new 132kV transmission substations, using the NEC3 form of contract, has been commenced since 2012. Three more substations will commence construction in 2014.

#### Pilot projects for private sector in Hong Kong

The core objective of CLP's contracting strategy is to improve project outcomes in cost, quality and time through a win-win relationship with key contractors. This has proved to be successful in bringing mutual benefits over the past 15 years. CLP started using NEC Term Service Contract (TSC) for maintenance services in 2010 and has subsequently extended this Engineering Construction Contract (ECC) to build 132kV transmission substations in 2012, with an objective to facilitate a collaborative working culture and to foster a long term business relationship with a contractor, who has strong commitment to continuous improvement in health and safety performance, programme, cost and risk management. This approach to procurement also aims to build up capability to use other contract models including target cost and management contracts. Chun Yat Street substation project was selected as the first pilot project using ECC Option B, followed by the Lai Wan Interchange substation using the same contract model. The third project, the Lam Tei substation, is being procured using the more collaborative ECC Option D, in which three electrical and mechanical subcontract packages have been procured using open book target cost contracts.

#### **Shorten the learning curve**

- Prior to commencing the projects, a partnering workshop was held in which CLP took the lead to promote the concept of collaborative working to the project team, including the consultants and contractor, for a commitment to continuous improvement. All key parties signed a project charter confirming their commitment to this objective.
- An NEC adviser was engaged to prepare the NEC contract for each proposed substation, along with providing training to the project teams including contractor, consultants, quantity surveyor and CLP team regarding the practical application of NEC contract. All team members received the Option B training and later the Option D.
- An online NEC contract management system has also been adopted to assist the project set-up and the day to day contract administration. It provides a single central repository of information that is accessible by all parties, ensuring a transparency of the construction information relating to quality, cost, programme and risks. The online system supports all parties in complying with ECC procedures, enabling a smoother contract execution, minimising possible notices/warnings and enables construction issues to be addressed in a timely manner.

#### **Benefits of NEC3**

- Fostering the collaborative working environment among all parties involved in the projects.
- Providing a project management framework that facilitates the identification and earlier mitigation of risks.
- More effective management of cost and time related issues between all parties.
- Providing transparency of on-going construction information among all parties thereby improving the communication process.



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#### NHS PROCURE21, ENGLAND

NHS ProCure 21 is an NEC-based framework programme run by the UK Department of Health to procure publicly funded capital schemes for England's National Health Service. It has already successfully delivered over 220 community hospitals, primary care centres, mental health units and other acute services such as cardiac care and out-patient units. Each project is undertaken by one of a framework of principal supply chain partners, engaged by the relevant NHS trust under an NEC2 Engineering and Construction Contract. Each partner has a series of specialist primary supply chain members that form an integrated team. The rapid mobilisation afforded by the framework and the increased certainty of time, cost and quality provided by the long-term relationships and NEC's partnering approach has resulted in some excellent delivery figures. In 2007, 93% of schemes were delivered on budget and 83% on time, and to date there has been no litigation on any ProCure21 scheme. In 2010 the framework will be replaced by ProCure21+, which will be based on NEC3.

#### **NEC** contract form

NEC2 Engineering and Construction Contract option C

#### Amended? No

Contract value Total £3.4 billion at January 2009

#### Start and finish dates

September 2003 - September 2010

#### **Employer** NHS Trusts in England

#### Contractor

Principal supply chain partners: Balfour Beatty, BAM, Costain, Integrated Health Projects, Interserve, Kier Health, Laing O'Rourke, Medicinq

#### Other project team members and roles

Over 200 pre-qualified primary supply chain members covering specific areas such as architectural design, civil and structural engineering, construction, mechanical and electrical services and cost management

#### Contact for further information

Julian Colaco, Training and Communications Manager, email julian.colaco@dh.gsi.gov.uk, telephone +44 113 254 5851

#### Other information sources

NEC Users' Group newsletter, ProCure21 special issue, April 2004 http://www.nhs-procure21.gov.uk

# Aldar pioneers NEC3 on massive Middle East complex

#### BY **SIMON FULLALOVE**, EDITOR

Leading United Arab Emirates developer Aldar Properties has taken the pioneering step of adopting NEC3 to build its vast £7.3 billion Al Raha Beach mixed-use waterfront development near Abu Dhabi. It is believed to be the first time the contract has been used anywhere in the Middle East.

'Implementation of the NEC throughout the complete supply chain at the Al Raha Beach

development is not only a first but also a massive step forward in the region,' says Aldar development director Michael Cox.

#### Time and cost certainty

'We believe the NEC will attract world-class vendors required for the efficient and timely delivery of the Al Raha Beach development,' he says. 'The contract is a mechanism that will

ensure quality, time and cost certainty through a collaborative integrated team approach.'

The main elements of the 500 ha development are being delivered by Aldar's joint venture Aldar Laing O'Rourke, which was set up in November 2006 under managing director Christopher Wilkinson. Following preparatory dredging and reclamation works, the joint venture started construction of the first of seven major highway interchanges in July 2007.

Around 70% of the 8.5 km long development is to be built on reclaimed land and islands. It will consist of seven mixed-used precincts of marinas, hotels, shops, offices, houses and apartments up to 40 storeys high. First buildings should be completed in 2009 and, when finished in 2019, the development will accommodate over 120 000 people.

#### Delivering £1 billion a year

Infrastructure requirements include around 25 million m³ of sand fill, 8 km of waterfront diaphragm walls, 75 bridges and extensive road, rail and canal networks. Construction turnover is expected to peak at £1 billion a year with up to 30 000 workers on site and concrete demand reaching 40 000 m³ a week.

'By adopting NEC, Aldar has again demonstrated its commitment to pioneering new approaches to the delivery of major construction projects,' says Wilkinson. 'The higher degree of fairness to all parties that the contract provides is enabling Aldar Laing O'Rourke to attract the world's best talent for our own management staff, as well as the supply chain we require to work with us.'

Planning, design and project management services are being provided by AECOM subsidiary Cansult Maunsell.





The UK government's Department for Environment, Food and Rural Affairs (Defra) has selected NEC3 to procure two highly sustainable office projects in north-east England.

The £15 million York Refresh Project in Yorkshire involves the reorganisation, refurbishment and extension of an existing office complex to create modern, efficient accommodation for 1150 staff. The project is on target to achieve an 'excellent' rating under the BRE Environmental Assessment Method (Breeam).

Framework contractor Kier Northern is engaged under a NEC3 Engineering and Construction Contract (ECC) option C, target contract with activity schedule. Work started on site in April 2006 and should be completed by mid 2008.

#### **Carbon-neutral**

Further north, the £4 million Project Zebra scheme involves accommodating three Defra business units within an existing office building

at Alnwick in Northumberland. In addition to setting out to achieve a Breeam 'excellent' rating, the project is also likely to become Defra's first 'carbon-neutral' building thanks to new wind turbines, photovoltaic cells, solar heating and a biomass boiler.

Kier is carrying out the work on a designand-build basis under ECC option A, priced

New hub building forms the central part of Defra's £15 million NEC3-procured, Breeam 'excellent' office refurbishment in York

contract with activity schedule. Work started on site in February 2007 and will also be completed by mid 2008.

Project manager on both projects is Appleyards and quantity surveyor is Davis Langdon. Both projects are also using the CCM web-based contract management system supplied by Management Process Systems.



NEC3-procured office development in Alnwick is set to be Defra's first carbonneutral building with wind turbines, photovoltaic cells, solar heating and a biomass boiler

# BAA chooses NEC3 for Heathrow Terminal 2

#### **SIMON FULLALOVE EDITOR**

UK airport operator BAA has just signed an \$812 million NEC3 contract for design and construction of the new 'green' Terminal 2 building at Heathrow airport in London.

The NEC3 Engineering and Construction Contract (ECC) option C (target contract with activity schedule) was awarded to Hetco, a joint venture between Ferrovial Agroman and Laing O'Rourke. It is BAA's largest single construction contract to date.

The contract covers detailed design and construction of the main 180 000 m² Terminal 2A building and 10 aircraft stands on the site of the now-demolished 1950s Terminal 2 and Queen's Building. Hetco will also be responsible for coordination and integration of baggage systems and the building's climate and information control systems.

#### Completion in 2014

Work is due to start on site next month and should be completed by mid 2014, boosting passenger capacity from 2 to 20 million passengers a year. A second phase, due for completion in 2019, will extend Terminal 2 into the existing Terminal 1 site, raising passenger capacity to 30 million.

Steven Morgan, Heathrow's capital director said, 'This is BAA's largest ever single construction contract, and I am confident that it represents great value for our airlines and for the millions of passengers that will benefit from its modern, new facilities. The Hetco team has demonstrated to us that they will deliver this project in a timely and efficient way, and to a high standard.'

Hetco's Steve Hollingshead commented, 'We are delighted to have won this prestigious project and look forward to working in partnership with BAA to deliver a world-class facility.' Hetco was appointed in 2008 as one of BAA's nine construction suppliers

#### Energy-efficient design

Initial designs for the highly energy efficient new terminal were devised by Foster and Partners and subsequently developed by Hetco.

The new building will produce 40% less carbon than the buildings it is replacing. Large north-

facing windows in the roof will reduce the need for artificial light and avoid generating uncomfortable levels of heat.

In addition, solar panels on the roof will reduce dependency on energy supplies and a new energy centre, partially fuelled by renewable resources, will provide heating and cooling.

#### New Terminal 5 satellite

Elsewhere at the airport Carillion is building a £230 million third satellite for Terminal 5 under an NEC3 ECC option A (priced contract with activity schedule). Work on Terminal 5C started in 2008 and is due for completion next year.

Around 10% of the main &4.3 billion Terminal 5 project was procured directly under NEC contracts and BAA's version of NEC was the only recommended form for thousands of second-tier contracts.

BAA commercial director David Ferroussat will be giving the keynote speech at the NEC Users' Group annual seminar on 19 April 2010 (see page 8).

LEFT Heathrow airport's new Terminal 2 building is being designed and built under an £812 million NEC Engineering and Construction Contract option C



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## -nec users' group



## London 2012 Olympic Park delivered on time and within budget using NEC3 contracts

MARC BRYANT HEAD OF COMMERCIAL GOVERNANCE, ODA

Looking out across the Olympic Park now, it seems incredible that so much has been accomplished in such a relatively short space of

As you read this article, we stand on the eve of the London 2012 Olympic and Paralympic Games, with the UK ready to showcase itself and its achievements to the world.

#### Ambitious and intensive

It is easy to forget that a little over 6 years ago we embarked on one the most ambitious and intensive urban regeneration projects the UK has witnessed since the aftermath of the Second World War.

The UK Olympic Delivery Authority (ODA) was established to design and deliver the construction programme for the venues and

infrastructure required to host the London 2012 games.

The programme has been delivered within budget, and ahead of schedule, and all against a backdrop of an increasingly tough economic climate, and intense public scrutiny and

#### **Embedding spirit of NEC**

In 2006, ODA made an early decision to employ the NEC3 suite of contracts across the majority of its projects, and sought to embed the spirit of NEC throughout ODA and its delivery partner, CLM.

The flexibility and approach to change control that NEC3 contracts offer has helped to make possible what has been a truly unique collaboration between public and private

sectors in the UK.

It has helped enable delivery through a contractual framework embodying transparency and governance.

#### Testimony to collaboration

The London 2012 construction programme has been a brilliant testimony to what can be achieved in the spirit of mutual trust and cooperation and is a tribute to the UK construction industry.

I hope that this dedicated issue of the NEC Users' Group newsletter offers you an interesting and entertaining insight into the contractual and commercial drivers that have underpinned delivery.

For further information please contact the author, email marc.bryant@london2012.com



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## NEC's role in delivering the London 2012 construction orogramme

MARC BRYANT HEAD OF COMMERCIAL GOVERNANCE, ODA

The UK Olympic Delivery Authority (ODA) is the nondepartmental public body established to manage the delivery of the London 2012 construction programme across the Olympic Park and Village

The challenge ODA faced at its inception in 2006 was considerable, with a site of some 2.5 km<sup>2</sup> to be redeveloped, and the infrastructure, utilities and landscape works to be delivered to support the construction of a suite of permanent and temporary venues for the London 2012 games.

#### Compliance and policy

The works had to be delivered against a backdrop of compliance with the UK's public procurement regulations, and of delivering a set of ambitious policy aims and priority themes

- health and safety
- sustainability
- socio-economic regeneration
- legacy
- security.

#### Developing a strategy

A work-packaging strategy and contract choice for the programme was critical in setting ODA on course for success. The overall programme was segmented into its constituent delivery

- enabling works
- utilities
- structures
- bridges and highways permanent venues
- temporary venues
- landscape and public realm.

These were underpinned by programme-wide

logistics and security projects. As one senior member of the team remarked of the challenge 'How do you eat an elephant? Answer: 'in small chunks'

With the programme established, and 112 primary contracts identified, ODA needed a commercial strategy and approach that would support the delivery of a highly complex multidisciplinary programme for works that were not completely defined, and had a rigid deadline and a highly publicised budget.

#### **NEC3** contract suite selected

The NEC3 suite of contracts was adopted by ODA to deliver the majority of its Olympic Park construction programme (see page 3).

Its selection centred on the right mix of key facets that would enable ODA to deliver its obligations successfully, including

- a wide adoption in the marketplace, with a proven track record of use in the supply chain
- an extensive array of standard commercial and contractual approaches that support different project types
- an ethos of collaboration
- a robust change-control mechanism that offers transparency over the cost and schedule impacts of each change event
- the transparent management of risk.

#### Progressing in partnership

Central to ODA's delivery approach was the appointment of a delivery partner; an ambitious, but ultimately simple plan to make the most of the experience and ingenuity of the construction industry in partnership with an informed, 'thin' client.

Following completion of one of the first competitive dialogue procurement procedures in the UK, CLM - a joint venture between CH2M Hill, Laing O'Rourke, and Mace - was successfully appointed as ODA's delivery partner to provide programme and project management services via an NEC3 Professional Services Contract (PSC) (see page 5).

The contract saw CLM accept significant delivery risk, and ODA incorporated programmelevel cost and schedule incentives linked to the phases of delivery.

#### Fit for purpose

ODA and CLM moved to finalise the delivery structure for the major projects, adopting a model based around a main contractor approach, with an integrated project team consisting of ODA, CLM and contractor. Through this model ODA sought to engender an ethos of collaboration from the beginning.

As part of the process, ODA and CLM refined a proforma works and site information document, combining the two into the 'project information'. This was split into site-wide and project-specific sections, which could be utilised on each contract, maximising efficiency

The method of producing the works and site information has been very well received by the supply chain and has provided significant benefits to the project management team.

#### Moving into the market

The delivery structure informed the detail of the major procurement programme, which began with a wide market engagement exercise.

In 2007, the UK construction market was buoyant, and the ongoing issues with the Wembley Stadium redevelopment were fresh in the minds of the likely supply chain. With numerous private enterprise clients offering projects that were lower risk and of considerably lower profile than London 2012, initial market testing demonstrated little appetite for work on the programme.

A regime of events targeted at stimulating both appetite awareness of the project resulted largely in success. However, the first two venues to be procured - the main Olympic Stadium and the Aquatics Centre - both still suffered from a lack of widespread interest, predominantly because these were the first venues 'out of the blocks', and ODA was still an unproven entity.

In recognition of both the likelihood of changes to the Olympic Park, and the thenbuoyant economic climate, the early venue contracts - including the Velodrome and the Media Centre - were let on an NEC3 Engineering and Construction Contract (ECC) option C (target contract with activity schedule) basis, with the contractor's share positioned to ensure an equitable risk-sharing position.

#### Changing with the market

As part of ODA's commitment to a sustainable games, a number of venues were designed to be temporary, and will be removed and reused (either in whole or in part) after the games. The principal temporary venues are

- Basketball Arena
- Water Polo Arena
- Eton Manor (although Eton Manor Sports Complex is a permanent structure and will provide legacy recreational facilities).

The original delivery model for temporary venues had been the same main tier 1 contract model employed for the major permanent assets. However, in response to the then buoyant market conditions, and utilising the specific experience of the delivery partner, ODA and CLM developed an alternative model for temporary venues, the 'managed package solution' (MPS) approach.



The £481 million, 80 000 seats Olympic Stadium along with most other permanent facilities were procured under an NEC3 Engineering and Construction Contract option C



#### **NEC Asia-Pacific Users' Group application** form

To: **NEC Users' Group** 

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#### Price:

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Further to my attendance of the NEC Asia-Pacific Users' Group Conference on the 25 November 2013, please enrol my organisation for the NEC Asia-Pacific Users' Group.

Name:	 	 
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Once your application form is received, your welcome pack will be sent to you.

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