香港電器工程商會
Hong Kong Electrical Contractors' Association
會員通訊
Newsletter
May - Dec 2020
二零二零年五月至十二月

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HKECA Newsletter May - Dec 2020
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尼亞加拉瀑布觀光客船- 霧中少女號- 採用新型純電動渡輪

零排放技術將會為未來交通運輸邁入一個新的時代，兩艘全新的霧中少女號客船由高容量蓄電池組供電，是美國有史以來首批純電動船。這兩艘新船採用ABB零排放技術，於2019年投入服務。全電動渡輪將取代目前的柴油船，在航程中一次可容納500多名遊客。霧中少女號輪渡公司成立於1846年，每年從5月持續營運到11月的第一個星期，每30分鐘就有一班船前往瀑布底部，全年載客量約為160萬人。每艘電動船將由總容量為316 kWh的蓄電池組提供動力,蓄電池組在兩個雙體船之間均勻分佈。船上配備兩套完全獨立的電力系統，使營運更富彈性。電動船將在每個航程之間的乘客上落船期間充電。充電只需7分鐘，就可支援蓄電池組為總功率400 kW (563 HP)的電機提供電力。霧中少女號輪渡公司邁出了決定性的一步，採用船舶電氣化的綜合解決方案，降低客船在尼亞加拉大瀑布的排放量，實現電動交通流動性可持續的技術。

Electrifying the Niagara Falls Maid of the Mist ferries

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Zero-emission technology will power the next-generation, fully electric ferries on the iconic Maid of the Mist tour at the Niagara Falls. The two new vessels will be powered solely by high-capacity battery packs, making them the first purely electrically powered vessels built in the United States.

It is appropriate that one of the latest advances in electrical power should be associated with the Niagara Falls. Here it was, in 1896, during the War of the Currents that pitted Edison's DC against Tesla's AC, that the switch was thrown on George Westinghouse's Niagara Falls Power Project. This historical event saw AC electricity flow to consumers in nearby Buffalo – the first city in the United States to have widespread street lighting and a place still known as "The City of Light." Just a few years later, the AC power generated by the Niagara Falls was illuminating many parts of New York City, including Broadway. The project was one of the first large-scale hydropower plants in North America and a personal triumph for Tesla.

Now, over 120 years after this early pioneering work in electrical engineering, the Niagara Falls are once more the focal point of technical innovation: Zero-emission technology will power the next-generation, fully electric ferries that will replace the current diesel vessels that take over 500 visitors at a time on the iconic Maid of the Mist tour. This tour sails past the base of the American Falls and into the basin of Horseshoe Falls – the largest of the three waterfalls at Niagara. This excursion is not only one of the top attractions in the United States, but also the oldest.

The two new 28 m catamaran vessels will be powered solely by high-capacity battery packs, making them the first fully electric vessels ever built in the United States (usually, electric boats and ships have auxiliary diesel generators to power on board ancillary systems or to provide thrust when the electric propulsion is unavailable).

Emission remission

The Niagara Falls are a wonder of the natural world – and as such should be enjoyed without having to breathe in fumes from marine engines or endure the noise and vibrations the current ferries generate. Now, the nearly silent electric ferries – due to enter service in late 2019 – will carry passengers up to the falls and allow them to take in their majesty while breathing clean air, just as nature intended.

The 7-minute battery boost enables the vessel's dual electric propulsion motors to maintain their total output of 400 kW.

In the dock and charged

The Maid of the Mist boats set off from their downstream dock for the base of Niagara Falls every 30 minutes, serving 1.6 million guests annually. While the ferry is docked and passengers are embarking and disembarking, the new boats' lithium-ion batteries will be recharged. The seven-minute charge provides a battery boost to enable the vessel's dual electric propulsion motors to maintain their total output of 400 kW (563 HP). Each trip consumes about 38 kWh. The batteries are charged up to 100 percent overnight and still have 80 percent at the end of the working day. Naturally, the electricity needed to charge up the 316 kWh battery packs comes from zero-emission hydropower.

Electrifying the Niagara Falls Maid of the Mist ferries

Artist's rendering of the two new all-electric Maid of the Mist tour boats. The boats' design is modular. The modules were built in a shipyard then trucked to site, where they were craned into the assembly area near the river. Craning the vessel modules to the assembly area was challenging due to the difficult topography of the area. The boats' hulls are made from 5086 H116 marine-grade corrosion-resistant aluminum alloy.

All-electric for all

The ferry company – the Maid of the Mist Corporation, founded in 1846 – is family owned and operated and their step forward in demonstrating the commercial viability of all-electric boat technology has attracted attention from around the world. The Niagara boats might be among the first all-electric vessels, but they will not be the last: Passenger ferries, river barges, harbor tugs and dredgers are just some classes of vessel that are eminently suited to all-electric operation. Marine vessels are one of the largest contributors to transportation emissions (3 to 5 percent of global CO_2 and over 5 percent of global SOx) so electrification of shipping cannot come soon enough. Currently, it would be difficult to build ocean-going vessels that are 100 percent electric. However, as equipment becomes smaller and more cost-effective, doors are opened for many new opportunities not thought possible just a few years ago. Autonomous, all-electric high-sea vessels might just set sail some day in the not-too-distant future.

New horizons in marine battery technology

Global interest in marine electrification is being spurred on by, for instance, new International Maritime Organization (IMO) rules, such as the 2020 IMO fuel sulfur regulation, which will reduce the limit on the sulfur content of bunker fuel. Maritime operators are therefore keen to explore fuel cell technology. The MARANDA project, a joint venture of several companies financed by the European Union, will design and implement a 165kW proton-exchange membrane fuel-cell unit for the research vessel Aranda. The main objective is to verify the fuel cell's ability to produce emission-free electrical power with low noise and vibration levels. The electrical power conversion technology will be delivered to attach the fuel cell system to the vessel's electrical power plant.

The fuel-cell power system will play a significant role in accelerating the adoption of sustainable solutions for marine e-mobility and help shipowners meet increasing demands for clean operations.

The two partners will leverage existing kW-scale fuel-cell technologies and optimize them to create a pioneering MW-scale solution suitable for powering larger ships. With an electrical generating capacity of 3 MW (4,000 HP), the new system will fit within a single module no bigger than a traditional fossil-fuel marine engine.

Iceland's first electric ferry, visualized by Polarkonsult, a design partner of the vessel.

E-mobility for a greener world

Battery technology also underpins zero-emission, electrified vessels– for example, Iceland's first electrified ferry. This boat will carry 75 cars and 550 passengers on a sometimes treacherous 13 km crossing to an island off the Icelandic coast. A dockside Onboard DC Grid TM

One of the new all-electric Maid of the Mist ferries at American Falls, Niagara.

system recharges the battery in just 30 min via a DC connection. Unlike the Niagara boats, this ferry has a backup diesel generator, though it is foreseen that it will be used only rarely.

The Maid of the Mist Corporation's decisive move toward e-mobility and the comprehensive palette of solutions for marine vessel electrification described above the beginning of a new era in transportation. Reducing emissions at Niagara Falls is not only important for this national natural treasure, but also important in proving that the technologies enabling sustainable mobility are already available today.

References

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[2] M. Kajava, "MARANDA – Aranda goes hybrid." Available: http://search.abb.com/library/Download.aspx?DocumentID=9AKK107045A7585&LanguageCode=en&DocumentPartId=&Action=Launch

[3] "ABB and Ballard Power Systems to jointly develop zero-emission fuel cell power plant for shipping industry." Avail-ble: https://new.abb.com/news/detail/5360/abb-and-ballard-power-systems-to-jointly-develop-zero-emission-fuel-cell-power-plant-for-shipping-industry

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Footnote: e-mobility is an abbreviation of Electro mobility and is a general term used for the development of electric-powered technologies designed to move vehicle design away from the use of fossil fuels and carbon gas emissions.

會員動態 Members' News

香港電器工程商會 01/2020 - 08/2020年度新會員名單

入會日期	申請會員名稱	會籍	代表人
Joining Date	Applicant Name	Membership Types	Representative
01/2020	科慧機電工程有限公司 Forward Electric & Machinery Engineering Limited	普通會員 Ordinary Member	伍啟華先生 Mr. Ng, Kai Wa
01/2020	無量光電器材料(香港)有限公司 AMTB Electrical Supplies (HK) Limited	贊助會員 Associate Member	何然杰先生 Mr. Ho, Yin Kit
03/2020	新裕科技有限公司 Century Elite Technology Ltd	普通會員 Ordinary Member	陳德源先生 Mr. Chan, Tak Yuen
03/2020	長盈電器工程有限公司 Cheung Ying Electrical Engineering Ltd	永遠會員 Life Member	何志權先生 Mr. Ho, Chi Kuen
03/2020	志昂投資有限公司 Chicardo Investment Limited	普通會員 Ordinary Member	張志成先生 Mr. Cheung, Chi Sing
03/2020	永泰建築有限公司 Wintech Construction Limited	普通會員 Ordinary Member	姜銘歡先生 Mr. Kong, Ming Foon
06/2020	新駿(機電)工程有限公司 Sun Chun (E&M) Engineering Limited	贊助會員 Associate Member	陸文浩先生 Mr. Luk, Man Ho
07/2020	智藝綠色照明有限公司 Green Light Multiplex Co Ltd	永遠會員 Life Member	黎彰石先生 Mr. Lai, Cheung Shek
08/2020	協通電線有限公司 Hip Tung Cables Co Ltd	普通會員 Ordinary Member	容伯健先生 Mr. Yung, Pak Kin Eddie
08/2020	陳智文先生 Mr. Chan, Chi Man Kenny	普通會員 Ordinary Member	

搵食資料 Notes To Trade

香港房屋委員會 招標公告

香港房屋委員會招標公告可在以下網頁查看:
http://www.housingauthority.gov.hk/en/business-partnerships/tenders/

恭賀盈電工程有限公司
Congratulations to REC Engineering Company Limited

本會恭賀盈電工程有限公司中標於沙田石門安睦街第一期資助出售房屋發展計劃建築工程的電力裝置工程，並祝順利如期完成。

On Behalf of Hong Kong Electrical Contractors' Association, we would like to convey our congratulations to **REC Engineering Company Limited** for for the Electrical Installation for Construction of Subsidised Sale Flats Development at On Muk Street Phase 1, Shek Mun, Sha Tin (Sub-contract to Contract No. 20190212).

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恭賀金碧電器
Congratulations to Grandeur Electrical Company Limited

本會恭賀金碧電器中標於馬鞍山路資助出售房屋發展計劃及馬鞍山第86B區恆泰路第一期公營房屋發展計劃建築工程的電力裝置工程，並祝順利如期完成。

On Behalf of Hong Kong Electrical Contractors' Association, we would like to convey our congratulations to **Grandeur Electrical Company Limited** for the Electrical Installation for Construction of Subsidised Sale Flats Development at Ma On Shan Road and Public Housing Development at Hang Tai Road, Ma On Shan Area 86B Phase 1 (Sub-contract to Contract No. 20180557).

恭賀三馬工程有限公司
Congratulations to Samba Engineering Limited

本會恭賀三馬工程有限公司中標於葵涌麗祖路公營房屋發展計劃建築工程的電力裝置工程，並祝順利如期完成。

On Behalf of Hong Kong Electrical Contractors' Association, we would like to convey our congratulations to **Samba Engineering Limited** for the Electrical Installation for Construction of Public Housing Development at Lai Cho Road, Kwai Chung (Sub-contract to Contract No. 20190031).

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即將舉辦之活動 Upcoming Activities

機電・啟航2020
E&M Go! 2020

機電工程署與業界舉行一年一度的「機電・啟航2020」迎新典禮，將於2020年10月8日（星期四）舉行，活動已是連續第四年舉行，分享在培育機電人才方面的工作，鼓勵他們發揮所長，一展抱負。

Electrical and Mechanical Services Department and the industry organised the annual "E&M Go!" Orientation Ceremony will be held on 8 October 2020 (Thur). Among them is the "E&M Go! ", which has been held for four consecutive years to share the department's work in nurturing E&M talents for the event.

機電安全健步嘉年華2020
E&M Safety Walk and Carnival Fair 2020

機電安全健步嘉年華2020，將於2020年12月13日（星期日）在天水圍綠田園燒烤樂園舉行，此活動乃是連續第十八年由香港機電工程商聯會與香港機電業工會聯合會合作舉辦機電安全推廣計劃之項目。目的是為機電行業提升工地機電安全意識。多謝各會員參加。

The E&M Safety Walk and Carnival Fair for this year will be held on 13 December 2020 (Sun) at the Tin Shui Wai Green Field BBQ. This sizable event is jointly organized by The Federation of Hong Kong Electrical & Mechanical Industries Trade Unions and Federation for the 18th consecutive years.

亞洲創新建築、電氣、保安科技展覽會2020
Build4Asia 2020

亞洲創新建築、電氣、保安科技展覽會2020將於2020年11月11日至13日（星期三至星期五）在香港會議展覽中心舉行。提供一站式採購貿易平台，建造業嶄新先進產品、科技及服務，包括建築材料、樓宇自動化系統、智能家居、安全檢測系統等一應俱全。展覽會不僅能助您尋找和擴闊商業網絡，更促進行業交流與知識互通，是兩年一度不能錯過的行業盛會。

Build4Asia 2020 will be held in Hong Kong on 11 - 13 November 2020 (Wed to Fri) at the Hong Kong Convention and Exhibition Centre. Build4Asia is the No.1 Tradeshow for the Building, Electrical Engineering and Security Industries in Hong Kong which covers every facet of the construction industry from building materials and automation, smart city technologies to total surveillance system. Build4Asia is the ultimate B2B sourcing platform for companies to seek and widen their business opportunities.

第24屆理事選舉
The 24th Term Executive Committee Election

2021年至2023年 - 第24屆理事選舉將於2020年12月份舉行。

2021 to 2023 - The 24th Term Executive Committee Election will be held in December 2020.

盈電工程有限公司
REC Engineering Company Limited
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ISO50001: 2018
Certificate No.: CC 463

ISO 9001 : 2015
Certificate No. : CC 477

ISO 14001 : 2015
Certificate No. : CC 3588

OHSAS 18001 : 2007
Certificate No.: CC 3589

gec engineering
金 碧 電 器
Grandeur Electrical Co. Limited

CELEBRATE THE POWER OF AWARDS

Grandeur Electrical Co. Limited (金碧電器) has been awarded for the the Electrical Installation for Construction of Subsidised Sale Flats Development at Ma On Shan Road and Public Housing Development at Hang Tai Road, Ma On Shan Area 86B Phase 1 (Sub-contract to Contract No. 20180557)

Over the years, Grandeur Electrical Co. Limited has honored the top performer in the industry. We master the art of engineering with an engineering philosophy that lies in our core values.

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亞洲創新建築、電氣、保安科技展覽會

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NEW DATES

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香港會議展覽中心 Hong Kong Convention & Exhibition Centre

打造智能城市 建構綠色未來
Shaping a Greener and Smarter Future

Build4Asia首辦於1982年，是領先亞洲的建築、電氣工程和防火保安展覽會，多年來一直引領行業創新。2020年Build4Asia將繼續帶領建築服務業邁向綠色發展道路，展示一系列創新的建材和自動化設備、監控系統、智能城市科技和綠色技術。

Established in 1982, Build4Asia is the no.1 tradeshow for the building, electrical engineering and security industries that has always been at the forefront of industry innovation. The 2020 edition will return to lead the construction services industry towards a greener path, presenting a broad range of inspirational innovations in building materials & automation, surveillance systems, smart city and green technologies.

Build4Asia 2020 展會焦點 Key Highlights

智能家居、建築@智能體驗館
Smart Home & Building @Innovation Lab

Build4Asia會議2020
主題: 綠色智慧城市的創新工程
Build4Asia Conference 2020
Theme: *Engineering Innovations in Green and Smart Cities*

亞洲安防會議
主題: 亞洲安全科技與趨勢：機遇與威脅
Asian Securitex Conference
Theme: *Security Technology & Trends: Opportunities & Threats in Asia*

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