

Zero Emission Energy for Urbanisation

Case Study: Kai Tak 1E1 Foundation Works

Introduction & Project Information

- Main Contractor: Tysan Holdings Limited
- Project location: Kai Tak, Hong Kong
- Project type: Foundation of Residential Development
- Developer: Hong Kong Housing Society
- Delivery date: 19 April 2022
- Loads: 3 welding machines, 1 semi-auto welding machine, 1 water pump, 8 spotlights, cctv
- Enertainer Model: Enertainer F
- Input current to the Enertainer: ~ 25-30 amps



Site Setup

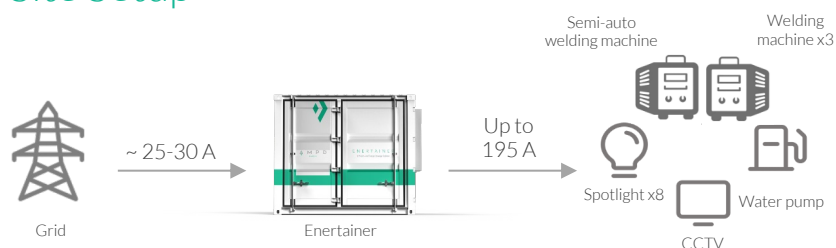
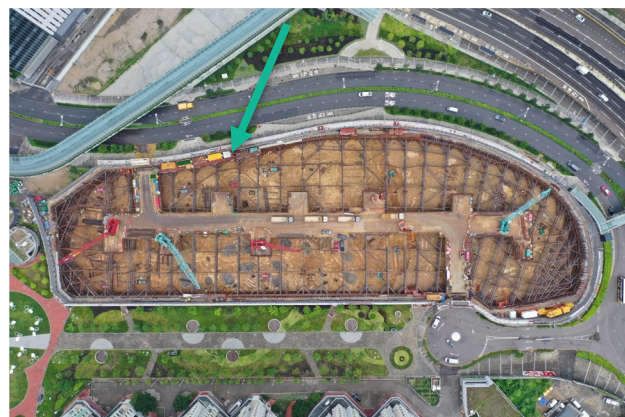


Figure 1. 'Block' diagram of the connection between the utility, Enertainer and the loads.



Results

- 82% lower operating cost¹ (vs. 200 kVA generators)
- 75% CO₂ reduction² (vs. 200 kVA generators)
- Highest current measured: 170 amps
- Zero on-site air pollutant, improve workers health

"Tysan is always open to adopting innovative technologies, to promote both carbon reduction and site operation optimization. Ampd Enertainer is one of these technologies. It is ideal for ELS works, with significantly less carbon emission and less noise than diesel generators. Its online platform "Enernet" is imperative in optimizing a smart construction site for us. Not only did it allows us to remotely monitor the system at anytime, but it also helped us track carbon savings of our site work."

Mr. Stephen Lam, Senior Project Manager,
Tysan Foundation Limited

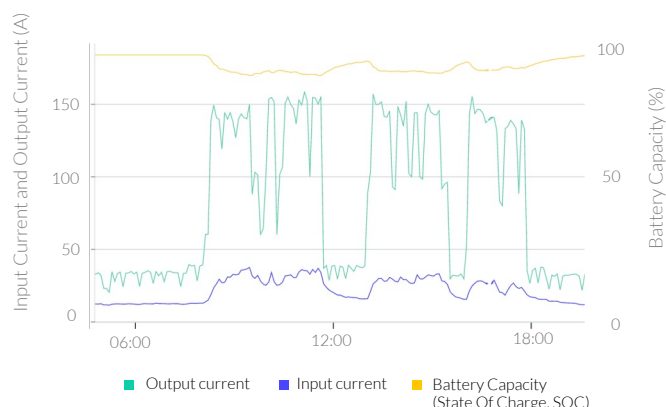


Figure 2. Performance metrics for the Enertainer on 22 Sep 2022

¹ Assuming a diesel price of HK\$11.0 per litre.

² Assuming a CO₂ emission intensity of 0.39 kg per kWh (Source: CLP Sustainability Report 2021)

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Case Study: The Southside Package 2

Introduction & Project Information

- Main Contractor: China Overseas Building Construction Ltd.
- Project location: Wong Chuk Hang, Hong Kong
- Project type: Residential Development
- Developer: MTR, Kerry Properties Ltd., Sino Land Company Ltd.
- Delivery date: 25 January 2021
- Loads: 2 material hoists, 2 passenger hoists, 5 passenger lifts testing
- Enertainer Model: Enertainer M
- Input current to the Enertainer: ~45 amps



Site Setup



Figure 1. 'Block' diagram of the connection between the utility, Enertainer and the loads.



Results

- 67% lower operating cost¹ (vs. 2 x 200 kVA generators)
- 53% CO₂ reduction² (vs. 2 x 200 kVA generators)
- Highest current measured: 204 amps
- Zero on-site air pollutant, improve workers health

"China Overseas is constantly seeking for green solutions to meet Hong Kong's ambitious goal of reaching carbon neutrality by 2050. We were very impressed with the performance of the Enertainer, especially the data-transparency that it provides which is non-existent in diesel generators. Ampd's online platform, the 'Enernet', was imperative in optimizing a smart construction site for us. The Enernet allowed us to remotely monitor the system and make more informed decisions that improved operational efficiency. Not only did the Enertainer reduce our carbon and pollutant emissions, but it did so while decreasing our operating costs by 67%."

Mr Chan Siu Keung, Amos Project Manager,
China Overseas Building Construction Ltd.

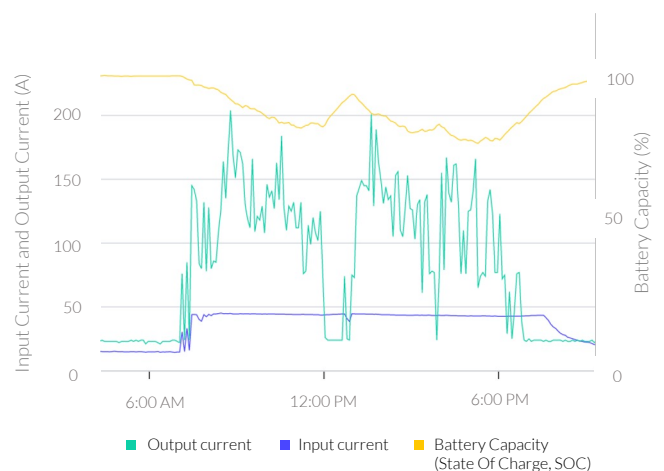


Figure 2. Performance metrics for the Enertainer on 12 Aug 2021

¹ Assuming a diesel price of HK\$4.5 per litre.

² Assuming an energy intensity of 0.71 kgCO₂ per kWh (Source: HKE Sustainability Report 2020)

A fully electrified construction site with zero diesel gensets

Case Study: Lee Kung Street

Introduction & Project Information

- Main Contractor: Paul Y. Engineering Group
- Project Location: Lee Kung Street, Hung Hom
- Project Type: Residential development
- Developer: Hong Kong Housing Society
- Delivery Date: 14 Nov 2020
- Supported Equipment: 1 tower crane, 1 hoist, 1 distribution box
- Enertainer Model: Enertainer L
- Input Current to the Enertainer: ~35 amps



Site Setup

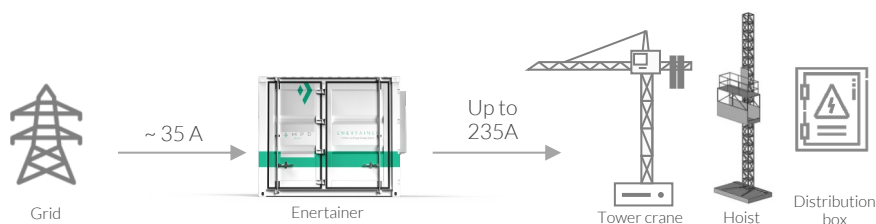


Figure 1. 'Block' diagram of the connection between the utility, Enertainer and the loads.



Results

- 71% lower operating cost (1 x Enertainer L replacing 1 x 350 kVA Diesel Generator)
- 72% CO₂ reduction¹ (1 x Enertainer L replacing 1 x 350 kVA Diesel Generator)
- Highest current measured: 235 amps
- Zero on-site air pollution, better for workers' health

"As Hong Kong aims to reach carbon neutrality by 2050, Paul Y strives to lead Hong Kong in achieving this ambitious goal. Ampd Energy's Enertainer perfectly aligns with this value and helps us reach the zero-carbon goal by drastically reducing our carbon footprint and at the same time reducing our long-term operational costs. The Enertainer allowed this site on Lee Kung Street to be fully electrified, eliminating the need for diesel gensets. We were impressed with the performance of the Enertainer, and have purchased and deployed multiple units on other sites. We are also very proud that Ampd Energy is a local Hong Kong company that is actively building a sustainable future for the construction industry."

Mr. Kenny W.L. Li, Director & General Manager,
Paul Y Engineering Group

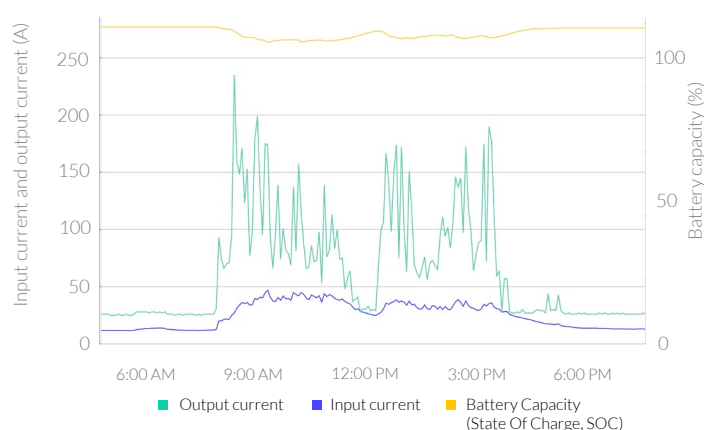


Figure 2. Performance metrics for the Enertainer on Jan 8 2022

¹ Average carbon intensity of electricity is 0.37 kgCO₂ per kWh (Source: CLP Sustainability Report 2020)

An Emission-free Future for Construction

Case Study: Multi-welfare Services Complex

Introduction & Project Information

- Main Contractor: SOCAM Development
- Project Location: Kwu Tung, Hong Kong
- Project Type: Modular Integrated Construction (MiC)
- Project Manager: HK Architectural Services Department (ASD), HK Development Bureau
- Delivery Date: 16 Oct 2020
- Supported Equipment: 4 tower cranes
- Enertainer Model: Enertainer L
- Input Current to the Enertainer: ~43 amps



Site Setup



Figure 1. 'Block' diagram of the connection between the utility, Enertainer and the loads.



Results

- Savings of HKD854,000/yr on diesel fuel cost ²
- 495,865 kg annual carbon reduction
- 61% CO₂ reduction ^{1,2}
- Zero on-site air pollution, better for workers' health

"This is the first project where we're using modular integrated construction technology in full application. Kwu Tung is in a rural area so power supply is limited, but the Enertainer solved this problem. It also helps reduce the impacts we have on the surrounding community and improve the productivity of our operations. The detailed data provided by the Enernet allowed us to monitor all 4 Enertainers real-time. We're really happy with the Enertainer. This is the future of construction, we must make it sustainable and data-driven."

Mr. Adrian Lo, Head of Corporate Development,
SOCAM Development

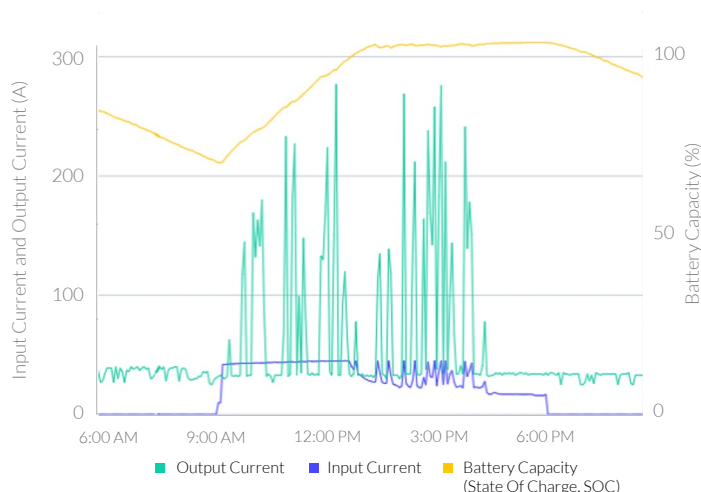


Figure 2. Performance metrics for the Enertainer on July 9 2021

¹ Average carbon intensity of electricity is 0.37 kgCO₂ per kWh (Source: CLP Sustainability Report 2020)

² 4 x Enertainer L replacing 4 x 500 kVA Diesel Generators)