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WAG

e·news



UNDER
CONSTRUCTION



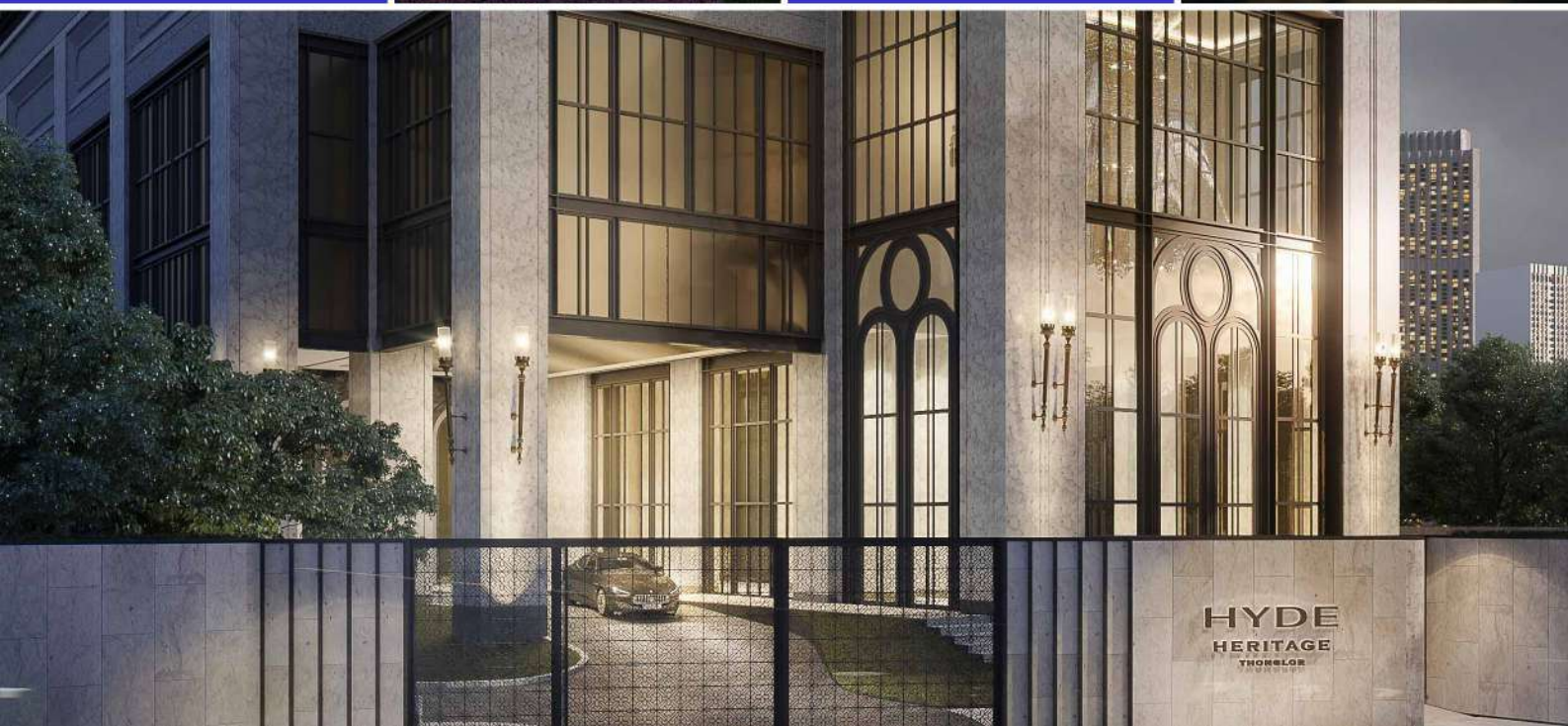
COMPLETED
PROJECT



NEW PROJECT



ECT.
ACTIVITIES & ARTICLE



HYDE
HERITAGE
THORNSLOE



To our Clients and Partners,

Welcome to our latest e-newsletter, the first this year. We hope that all of our previous e-newsletters have helped to keep you updated on our latest projects and provided you with information about our services that you may need and vital engineering tips.

We also hope you've been keeping well and safe during this pandemic, with all your loved ones around, and being creative about taking care of your physical and mental well being.

Here at W. and Associates, like you all, have certainly worked hard to provide the services you deserve and we are grateful for your continuous trust. We would like to take this opportunity again to walk you through some exciting projects that we have designed and managed.

Again, we thank you and we wish you all the best.

Mr. Chokewichit Laksanakorn
Group CEO

Our Social Media:



W. And Associates Group - WAG



W. And Associates Group



W. And Associates Group (WAG)



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(For project collaboration inquiries, please send email)

COMPLETED PROJECT
OKA HAUS



COMPLETED PROJECT

OKA HAUS

Location: @Rama 4 Road, Bangkok, Thailand

Owner: Sansiri Public Co., Ltd.

Project Summary: Building Type :

A 47-storey residential building with a total of 1,178 units.
Construction area is estimated at 75,185 sq.m.

WAG Responsibility:

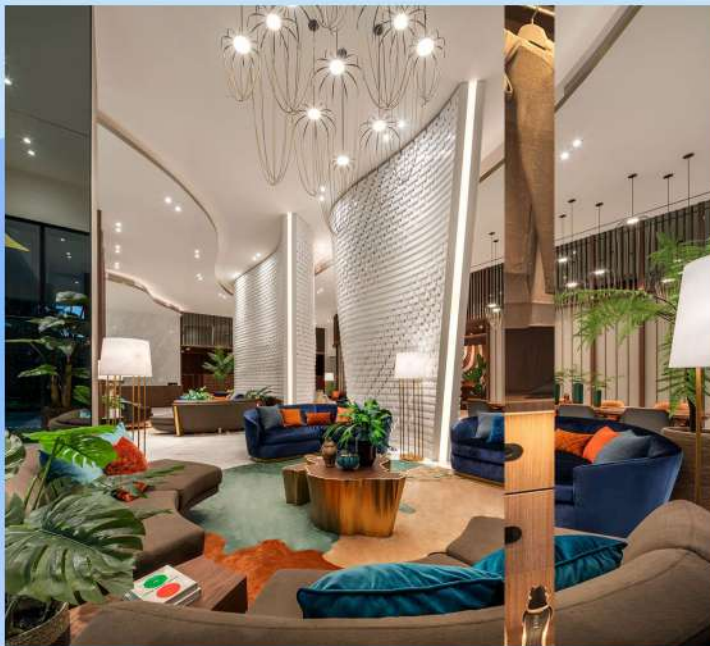
- Mechanical, Electrical and Plumbing System Design

Project Infoemation

This project draws inspiration from lofty mountains, glorious breezes and rays of sunshine that rises up affording homeowners the opportunity to embrace a life filled with tranquility and simplicity concurrent with nature.

Architect: Innovative Design & Architecture Co., Ltd.

Photo credit: D-sign Something Studio (Thailand) Co., Ltd.



COMPLETED PROJECT **IBIS STYLES BANGKOK SILOM**



COMPLETED PROJECT

IBIS STYLES BANGKOK SILOM

Location: @Silom Road, Bangkok, Thailand
Owner: Piyasombat Silom Company Limited.
Project Summary:
8-Storey hotel building and
automatic parking 78 cars. Total of 264 rooms.
Construction area is estimated at 9,900 sq.m.

WAG Responsibility:
- Construction Management

PROJECT INFORMATION

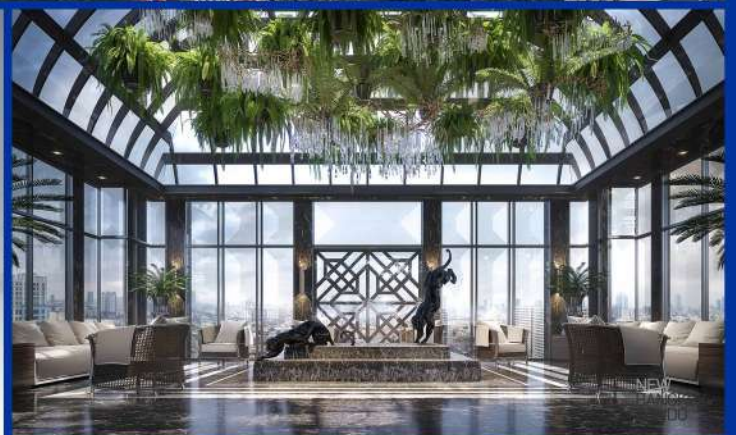
Ibis Styles Bangkok Silom is located on Silom Road, at the heart of the Bangkok CBD. It offers easy access to BTS Sala Daeng and MRT Silom. The hotel offers 264 rooms. Each room features a 43inch Smart LCD TV, high speed WiFi and rain shower. Connecting rooms are available for families. Facilities at the hotel include a restaurant, lobby bar and cafe, rooftop bar, pool bar, fitness centre and 1 ballroom or 3 separate meeting rooms. Perfectly suited for leisure and business travellers.

Photo credit:
JWS Construction Co., Ltd.
www.ibisstylesbangkoksilom.com



UNDERCONSTRUCTION PROJECT

HYDE HERITAGE THONGLOR



UNDERCONSTRUCTION PROJECT HYDE HERITAGE THONGLOR

Location: @Sukhumvit 59 Road, Bangkok, Thailand

Owner: Grand Star Company Limited.

Project Summary:

A 45-Storey residential building and

2-Storey basements. Total of 311 units.

Construction area is estimated at 4,072 sq.m.

W&A Responsibility:

- Construction Management

PROJECT INFORMATION

Created to perfectly meet the discerning demands of dynamic modern lifestyles, HYDE Heritage Thonglor rises gloriously over Sukhumvit main road to elevate urban living into a fine art. Here, contemporary luxury is heightened through an eye-catching expression of exceptional design and craftsmanship from lavish living spaces to exclusive five-star facilities and services.

Photo credit:

W. AND ASSOCIATES Consultants Co.Ltd.



NEW PROJECT
CENTRAL CHANTHABURI



NEW PROJECT CENTRAL CHANTHABURI

Location: @Chanthaburi, Thailand

Owner: Central Pattana Public Co., Ltd.

Project Summary:

Shopping complexes comprise of retail spaces, anchors, cinemas, F&B and etc. Construction area is estimated at 73,600 sq.m.

WAG Responsibility:

- Civil and Structural Design

Project Information

The first integrated mixed-use development project and the most completed lifestyle destination in Chanthaburi that enrich a modern lifestyle with countless brands for all target customers. It has well-designed space and zoning that will help customers find easily what they want.

Architect: M.A.A.R. Co., Ltd.

Photo credit: www.centralpattana.co.th



NEW PROJECT
THE ISSARA SATHORN



NEW PROJECT THE ISSARA SATHON

Location: @Chan Road, Bangkok, Thailand

Owner: Charn Issara Development Public Co., Ltd.

Project Summary:

A 37-Storey High-rise condominium with 270 units in total.
Construction area is estimated at 21,000 sq.m.

WAG Responsibility:

- Mechanical, Electrical and Plumbing System Design.

Project Information

This condominium project is characterized by minimalist style with simple but elegant facilities and desired modern technology such as perfect space areas for kitchen, dining, bedrooms, bathrooms, and well thought out storage area. It has also luxurious and spacious classy lobby with tall mirrors, exposure to nature from the light and green of the trees, and a touch of metallic detail.

Architect: Architects 49 Limited.

Photo credit: www.origin.co.th/belgravia-exclusive-pool-villa-bangna



NEW PROJECT

THE CROWN RAMA 4 - SATHON



NEW PROJECT THE CROWN RAMA 4 - SATHON

Location: @Rama 4 Road, Bangkok, Thailand

Owner: Sathaporn Estate Co., Ltd.

Project Summary:

A 32-Storey High-rise condominium building with 183 units.
Construction area is estimated at 20,000 sq.m.

WAG Responsibility:

- Quantity Surveying Service

Project Information

This project has a perfect balance of sophistication, convenience and comfort. It has elegant designs, high-standard facilities, and unbeatable address.

Photo credit: <https://thecrownrama4.com>



NEW PROJECT

BELGRAVIA EXCLUSIVE POOL VILLA BANGNA - RAMA 9



NEW PROJECT

BELGRAVIA EXCLUSIVE POOL VILLA BANGNA - RAMA 9

Location: @Bangna, Bangkok, Thailand

Owner: Origin Property Public Co., Ltd.

Project Summary:

A 2-storey luxury residential building with a total of 65 units

WAG Responsibility:

- Mechanical, Electrical and Plumbing System Design
- Civil and Structural Design

Project Information

This Luxury Private Pool Villa project has the charm of British style and outstanding architecture that emits a voice "Belgravia Exclusive Pool Villas Bangna-Rama 9" under the concept of living a life everyday above the level with privacy.

Architect: ATOM Design Co., Ltd.

Photo credit: www.origin.co.th/belgravia-exclusive-pool-villa-bangna



ACTIVITIES

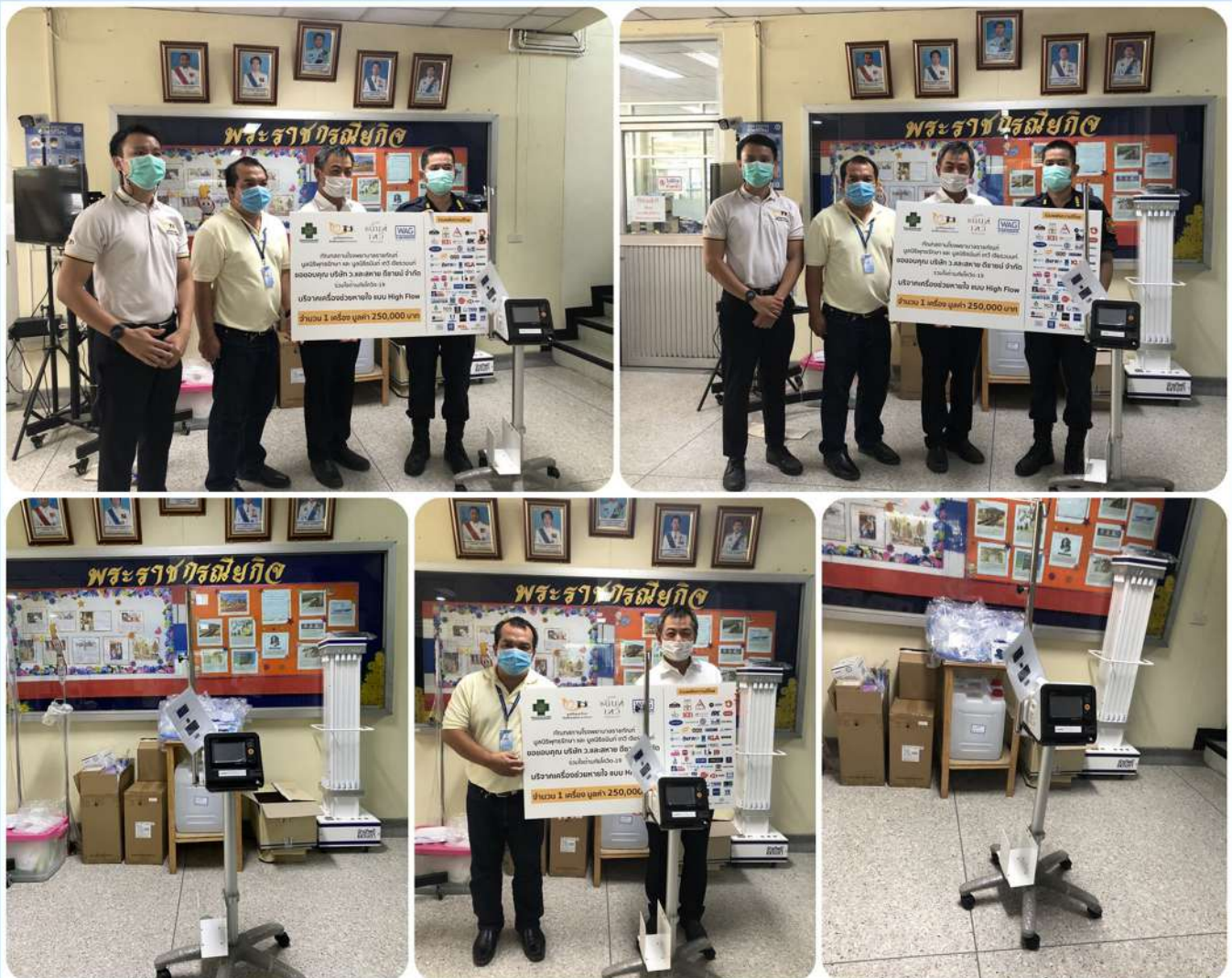
“WAG donates 1 clinical aspirator worth 250,000 to Foundations for COVID-19 patients”

The increasing number on infected patients in Thailand's third wave of COVID-19 has highlighted the need for aspirators for medical use. A respiratory machine that helps maintaining a functioning breathing capability of COVID-19 infected patients. In addition, this machine also helps stabilizes the lung function of the ill.

The clinical aspirator was donated to foundations namely; Medical Correctional Institute, Buddharaksa Foundation and Dhanin Chearavanont Foundation on 18th May 2021 with MCI's representatives by Dr. Pholdej Therdpithakvanij, Ph.D (Director of Civil & Structural Department of WAG) and Mr. Teerayut Thummanarak (One of the Project Directors of WAG).

The donation is part of WAG's commitment to supporting the foundations' coordinated response to the Pandemic and assisting the community throughout the pandemic.

WAG continues to wish everyone good health, joy & kindness in everyone's lives.



UNDERSTANDING HARMONICS



The power quality of electrical distribution systems has a drastic effect on power regulation and consumption. Power quality includes all aspects of events in the power system that deviate from normal operation, which includes harmonics. Harmonics is distortion on a power system caused by nonlinear-type loads, such as variable-frequency drives (VFDs), large computer systems, SCADA systems, electronic lighting ballasts, etc.

What is harmonics?

Harmonics should not be confused with transient dips, spikes, impulses, oscillations, etc. Also, the term “harmonic” refers to a component of a waveform that occurs at an integer multiple of the fundamental frequency. Harmonic distortion is the degree to which a waveform deviates from its pure sinusoidal values as a result of the summation of all the harmonic elements. An ideal sine wave would have zero harmonic components. For a 50-Hz fundamental frequency waveform, the 2nd, 3rd, 4th, and 5th harmonic components will be a 100 Hz, 150 Hz, 200 Hz, and 250 Hz, respectively.

Looking at Figure 1, you can see how the waveform does not have any harmonic components and is essentially a pure sinewave with linear loads. Linear loads draw current that is sinusoidal in nature so they generally do not distort the waveform.

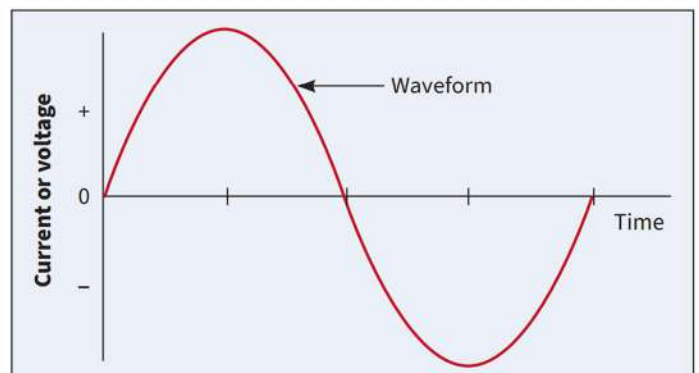


Figure 1: A pure waveform with no harmonics

Figure 2A shows the fundamental frequency waveform, the 5th harmonic waveform and the 7th harmonic waveforms. Figure 2B shows the combined resultant waveform of the three individual waveforms in Fig. 2A

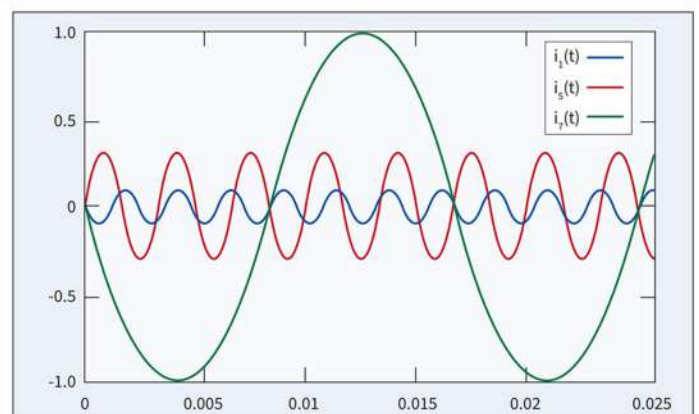


Figure 2A: The fundamental, 5th and 7th harmonic waveforms

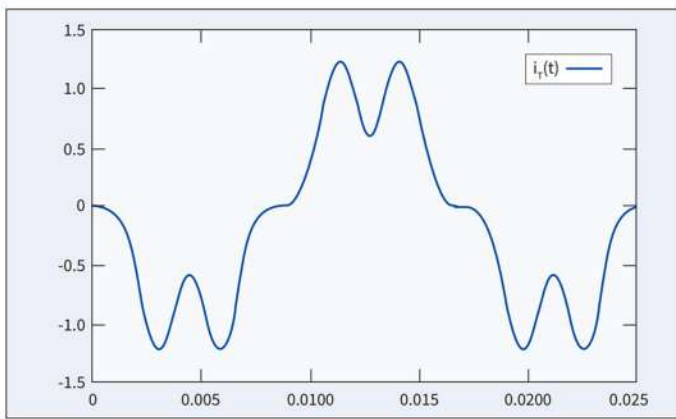


Figure 2B: The combined resultant waveforms of the 3 individual waveforms in Figure 2A

Origin of harmonics?

Equipment comprising power electronics circuits are typical non-linear loads and generate harmonic currents. Such loads are increasingly frequent in all industrial, commercial and residential installations and their percentage in overall electrical consumption is growing steadily.

Examples include:

- Industrial equipment (welding machines, arc and induction furnaces, battery chargers).
- Variable Speed Drives for AC or DC motors.
- Uninterruptible Power Supplies.
- Office equipment (PCs, printers, servers, etc.).
- Household appliances (TV sets, microwave ovens, fluorescent lighting, light dimmers).

Harmonic disturbances

Harmonics flowing in distribution networks represent disturbances in the flow of electricity. The quality of electrical power is deteriorated, and the efficiency of the system is decreased.

Here are the main risks linked to harmonics:

- Overload of distribution networks due to the increase of r.m.s. currents.
- Overload of neutral conductors, which current can exceed the phase currents.
- Overload, vibration and premature ageing of generators, transformers and motors as well as increased transformer hum.
- Overload and premature ageing of Power Factor Correction capacitors.
- Distortion of the supply voltage that can disturb sensitive loads.
- Disturbance in communication networks and telephone lines.

Economic impact of disturbances

All these disturbances have an economic impact:

- Premature ageing of equipment means it must be replaced sooner, unless oversized right from the start.
- Overload on the distribution network means higher equipment rating, increased subscribed power level for the industrial customer, and increased power losses.
- Unexpected current distortion can lead to nuisance tripping and production halt.

References:

EC&M magazine, March 2020

Electrical Installation Guide, 2018, by Schneider Electric

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