CITF DIGEST

CITF 建造業創科基金

融匯科技 創建香港 WE INNOVATE, WE BUILD

https://www.citf.cic.hk CITF 建造業創新及科技基金 citf.cic.hk 二零二零年九月 SEPT 2020 / 第五期 ISSUE 5

CITF CONTECH 2020

歡迎參加建造業創新及科技基金(基金)年度盛事ConTech 2020，體驗「創科分享」、「智慧建築攻略」及「基金導航」主題之旅。

政府於2018年10月成立10億元的基金，幫助本地建造業界掌握和應用創新科技，以及培育人才。這兩年來，基金秘書處積極鼓勵業界持份者參與各種活動及研討會，並舉辦CITF ConTech，以推廣基金資助項目及最新的建造業創新科技。

在疫情籠罩下，ConTech 2020 這項基金年度盛事於網上舉行，並已於9月15日揭幕。通過由「創科分享」、「智慧建築攻略」及「基金導航」三個主要環節組成的虛擬展覽，我們希望為建造業相關企業(包括承建商、分包商、顧問公司及物料供應商)及專業人士提供一個平台，進行互動的「創科分享」，並藉着「智慧建築攻略」探討最新的解決方案及新興科技，以及在「基金導航」中集思廣益，探討如何使我們的建築環境變得更美好和更安全。

有別於其他在網上平面進行的論壇，ConTech 2020 利用360度全景構建的虛擬平台展示最新的建造方法及科技。虛擬平台的設計不但參考了真實的建築工地，還考慮了展覽氛圍及互動程度等因素，務求為參加者帶來嶄新體驗。約有60個提供基金預先批核名單項目的供應商獲邀參展，在這個度身訂做的虛擬平台展出他們的科技產品。他們不單可介紹產品的特色，還可與參加者進行一對一線上對話。產品目錄內容豐富，涵蓋不同領域，由巨型的矩形隧道鑽挖機，到便攜的激光掃描器，再到虛擬的數碼解決方案也包括在內，參加者定能找到一項或數項「心水」產品。此外，參加者亦可從11名成功申請者(包括承建商及分包商)的分享中，了解他們申請基金的親身經驗，以及科技如何協助他們提高生產力、提升建造質素、改善工地安全和提升環保表現。

ConTech 2020 將於10月13日結束。事不宜遲，請立即瀏覽 www.citf2020.com，體驗最新的建造科技!

Welcome aboard the CITF ConTech 2020, the annual signature event of the Construction Innovation and Technology Fund (CITF), and enjoy the thematic tours of Technologies Sharing, PowerUP Talk and CITF Chats!




The Government set up $1 billion CITF in October 2018 to help the local construction industry harness innovative technology and nurture manpower. In an effort to promote funded projects and the latest construction innovation technologies, the CITF Secretariat has actively engaged industry stakeholders in various events and seminars throughout these two years and organised the CITF ConTech 2020.

In the wake of the pandemic, we launch this CITF signature event online. The web-based ConTech 2020 already kicked start on 15 September. Through the virtual exhibition, encompassing three main sessions Technologies Sharing, PowerUP Talks and CITF Chats, we aim to bring together construction-related enterprises (contractors, subcontractors, consultants, material suppliers) and professionals to engage at Technologies Sharing interactively, and explore the latest solutions and emerging technologies through PowerUP Talks, and stimulate thoughts during CITF Chats on how to make our built environment better and safer.

Different from other 2D-online forums, "ConTech 2020" showcases the latest construction methods and technologies via a 360-degree panoramic virtual platform. To bring a brand-new experience to the participants, the design of the virtual platform not only make reference from a real construction site, but also take into accounts factors like the exhibition atmosphere and level of interaction. Some 60 suppliers of the CITF pre-approved list items have been invited to showcase their technologies through this tailor-made virtual platform. In addition to introducing their product features, they can have one-on-one dialogues with participants online. The catalogue covers a wide spectrum of products. From jumbo machinery like rectangular tunnel boring machine to handy laser scanners to virtual digital solutions, participants will be able to find one or a couple of the items which interest them. 11 successful applicants, including contractors and subcontractors, will also share their hands-on experience in CITF application and how the technologies benefited them in terms of productivity, quality, site safety and environmental performance.

ConTech 2020 will conclude on 13 October. Wait no more! Come join us at www.citf2020.com to experience the latest construction technologies!

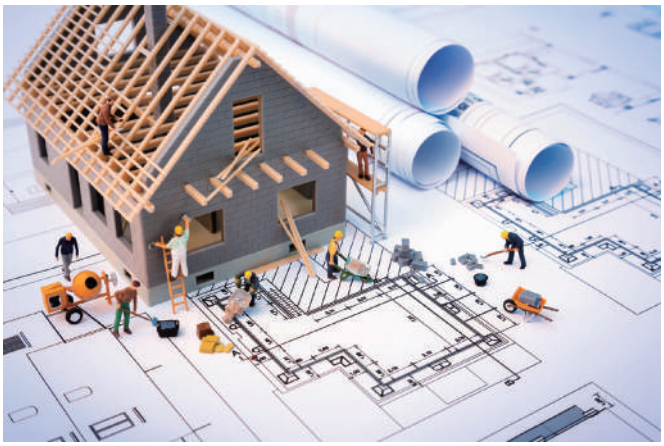
網上研討會「建造業創新及科技基金(CITF)」
Webinar "Construction Innovation and Technology Fund (CITF)"

政府希望通過創新科技，提升建造業的表現，而應用建築信息模擬(BIM)技術是其中一個重點推廣項目。由於BIM效益顯著，發展局自2018年起要求承建商在項目預算超過3,000萬元的基本工程項目中採用BIM技術。

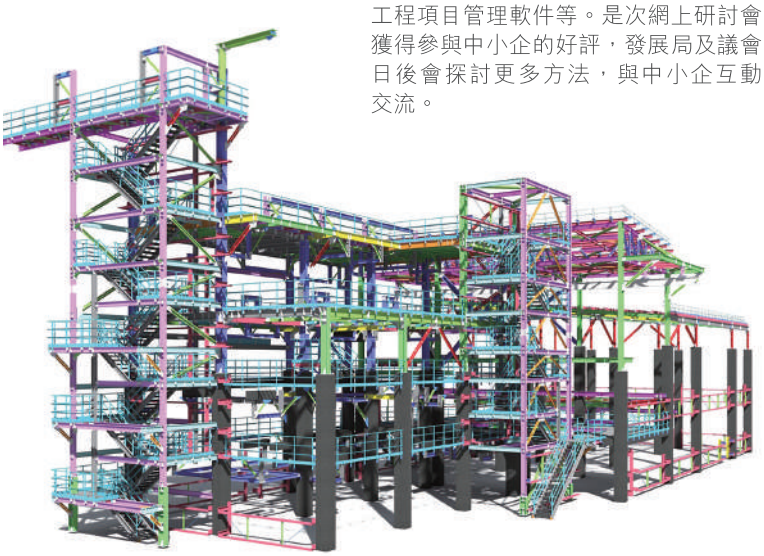
對於中小企而言，BIM技術的資本投資可能是很大的財政負擔。有見及此，建造業創新及科技基金(基金)以配對方式提供七成資助，支援企業添置所需的硬件及軟件，以及資助僱主為員工提供與BIM相關的培訓。

除了財政資助，發展局亦與建造業議會(議會)合作，舉辦多種活動、成立BIM專責小組和制訂BIM標準，從而向業界全面推廣BIM技術。為了讓中小企更深入了解基金的申請方法及BIM所帶來的好處，發展局於2020年7月20日通過中小企業支援與諮詢中心的平台，為中小企舉辦網上研討會。會上，議會代表介紹BIM技術如何在整個項目周期中整合各個流程，包括規劃及設計階段的概念設計和工程分析；施工階段各持份者的溝通和合作；以及在營運和維修階段中預防性維修及監察措施的制訂工作。

SUCCESS
中小企業支援與諮詢中心
Support and Consultation Centre for SMEs



此外，議會亦介紹了有關基金的詳情及申請程序，並分享申請基金的實用貼士和即場解答問題。為使參加者進一步了解創新及科技所帶來的好處，網上研討會上還介紹了一系列從預先批核名單中挑選出來的合適產品，包括無人機技術、手提鐳射掃描器、數碼平台、工程項目管理軟件等。是次網上研討會獲得參與中小企的好評，發展局及議會日後會探討更多方法，與中小企互動交流。



The Government aspires to upgrade the construction industry through innovative technologies. Application of Building Information Modelling (BIM) is one of the highlights. Seeing the benefits of BIM, the Development Bureau has since 2018 required contractors to adopt BIM for capital works projects with budgets exceeding $30 million.

Capital investment of BIM can represent a significant financial burden for Small and Medium Enterprises (SMEs). In view of this, the Construction Innovation and Technology Fund (CITF) provides a matching fund of 70% to aid enterprises in procuring the necessary hardware and software, and subsidises employers to arrange suitable BIM-related training for their employees.

In addition to financial subsidy, the Development Bureau also cooperates with the Construction Industry Council (CIC) to organise a wide range of activities, set up a BIM taskforce and establish BIM standards, with an aim to promoting BIM across the sector. To facilitate a better understanding among SMEs on CITF application and merits brought by BIM, the Development Bureau held a webinar for SMEs via the platform of Support and Consultation Centre for SMEs (SUCCESS) on 20 July 2020. Representatives of the CIC introduced how BIM integrated processes throughout the entire project lifecycle – from conceptual design and engineering analysis in the planning and design stage, to communication and collaboration among stakeholders in construction stage, as well as the formulation of preventive maintenance and monitoring in the operations and maintenance stage.

CIC also introduced details and application procedures of the CITF, shared practical tips in connection with funding application and answered enquiries on the spot. To better impress upon participants on how innovations and technologies can yield benefits, a wide range of suitable products including drone technology, handheld laser scanner, digital platform and project management software chosen from the pre-approved list were also brought up in the Webinar. The Webinar was well received by the participating SMEs. The Development Bureau and CIC will explore more alternatives to interact with SMEs in future.

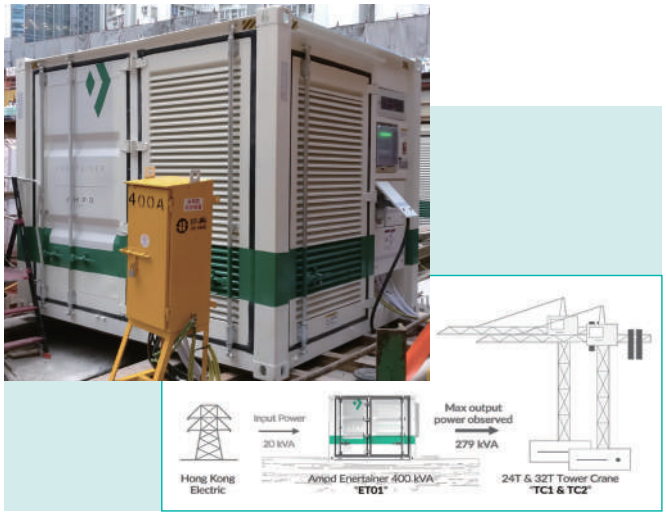
「建造業創新及科技基金」申請數字節節上升
CITF application figure is rising

由2018年10月至今已收到逾一千七百份申請，當中一千二百多份申請已經成功獲批，總資助額逾港幣二億七千四百萬元。

Counting from October 2018, the application number has reached more than 1 700, of which over 1 200 applications have been approved. The funding grant amounts is more than HK$274 million.

更安全環保的能源方案
Delivering a Safer and Greener Energy Solution

協興建築(協興)勇於突破常規，致力創新，以加快建造業發展，為各持份者創造共享價值。當工地仍倚重嘈吵的柴油發電機供電，協興已匯聚眾力，在可行情況下盡量減少工程項目的碳足跡。憑藉建造業創新及科技基金的資助，協興引入AMPD「淨能櫃」這個選項，遠較柴油發電機更符合財務效益。



AMPD「淨能櫃」是首個專為建築工地設計的先進電池系統，輸電量高達400千伏安（kVA），足以取代傳統柴油發電機，成為工地主要供電來源。為免供電中斷而蒙受巨大損失，我們謹慎驗證，為「淨能櫃」進行全面的供電和充電效能測試。由於「淨能櫃」的表現理想，協興便在太古坊二座工程項目加以採用。我們這個決定十分正確，結果工地無需燃燒柴油、經營成本降低、電力產量提高、空氣質素改善，以及工作環境更為安全。

為建築機械供電

現今的城市建設工程，依靠柴油發電機來滿足能源需求，皆因天秤、焊接機等大型機械用電量高，市內電網無法直接為其供電。然而，隨着科技進步，「淨能櫃」可通過電網充電，並充當大型「電源庫」，為大型建築機械供電。經驗告訴我們，一個「淨能櫃」可供電驅動兩部天秤同時運作。以輸出功效來說，「淨能櫃」實在毫不遜於柴油發電機。

有利環境及工友的綠色方案

協興在工程項目中積極推行創新措施，包括更多採用潔淨能源，為減慢全球暖化盡一分力。「淨能櫃」不會排放黑煙，亦不會產生一氧化碳、氮氧化物以及粒子等空氣污染物。與柴油發電機比較，AMPD「淨能櫃」可減少約八成碳排放。「淨能櫃」亦可以「靜音模式」操作，所產生的噪音僅為七十五分貝，較柴油發電機寧靜十倍。AMPD「淨能櫃」的出現，為我們的建造團隊締造更理想的工作環境。

加強安全維修簡便

「淨能櫃」的另一特色，是採用模組配置，無需關閉整個系統，亦可進行獨立維修，做到「無間斷供電」，把工地運作所受的干擾減至最低。此外，由於「淨能櫃」並非由柴油驅動，機械操作員再不用負責添加柴油，可避免由漏油構成的潛在威脅，以及因貯存柴油引致火警的潛在風險。「淨能櫃」不但能提升工地的生產力，亦有助減低前線工友所面對的安全風險。

實時監察 追蹤數據

AMPD「淨能櫃」可連接互聯網，讓協興在自己的線上平台進行實時遙距監察、設備管理和故障排除。我們會整合系統在機械運作、輸入及輸出電壓，以及警報信號方面所收集到的數據，以助改善工程規劃和管理，為客戶創造更大效益。

協興建築

To create shared value for our stakeholders, Hip Hing Construction (Hip Hing) upholds steadfast commitment to breaking through conventional practices, and realising innovation to expedite the development of the construction industry. While noisy diesel generators are still the dominating source of power supply on site, Hip Hing placed concerted efforts to reduce carbon footprints in our projects as far as practicable. Thanks to the CITF, AMPD Enertainer becomes a much more financially viable option.

AMPD Enertainer is the first advanced battery system tailormade for construction sites. With transmission up to 400 kVA, it can perfectly substitute traditional diesel generators as the dominant power source. Knowing how interrupted power supply can end up in tremendous losses, we carefully conducted comprehensive experiments to test its capacity in both power supply and power recharge. Well impressed by the performance of the Enertainer, Hip Hing decided to adopt it in our Two Taikoo Place Development Project. Our decision proved to be one very well-made – no diesel, lower operating costs, higher output, better air quality and safer working environment.

Powering construction machinery

Urban construction today relies on diesel generators to meet its energy demand because electricity grid cannot directly support the heavy power draw of large machinery such as tower crane, welding machine etc. With technological advancements, the Enertainer can be recharged by incoming grid and serve as a mega "power bank" to support scaled equipment. Our experience tells us that the Enertainer can power the operation of two cranes at the same time. On output wise, the Enertainer is nothing inferior to the diesel-eating power generators.

Providing green solution to the environment and workers

In an effort to slow down the pace of global warming, Hip Hing has actively embraced innovations in our projects. Increasing the use of cleaner energy is one of the initiatives. Enertainer emits no fumes, no air pollutants like CO, NOx and PM. Compared to that emitted by diesel-charged power generators, the AMPD Enertainer can reduce our carbon emissions by around 80%. And it can operate on a "mute mode" - with a noise level at 75 decibels only, ten times quieter than its noisy counterparts. The invention of AMPD Enertainer helps shape a better workplace for our building team.

Improving safety and low-maintenance needs

Another special feature of the Enertainer is its modular configuration that allows independent maintenance without shutting down the entire system. The provision of uninterrupted power supply brings the disruption to operation to its minimum. Moreover, our mechanics no longer needs to refuel diesel with the presence of the Enertainer. Potential threats of oil spills and fire risk of diesel storage can also be prevented. While boosting the productivity, the Enertainer also helps mitigate safety risks to our frontline workers.

Monitoring and Tracking Data Tracking Real Time

The internet connectivity of AMPD Enertainer facilitates Hip Hing to exercise real-time and off-site monitoring, device management, remote trouble-shooting on our online platform. We will integrate the data collected on the plant operation, input and output voltage and alarm signal to help improve our project planning and management in the pursuit of greater benefits for our clients.

Hip Hing Construction

採用全球領先地理空間平台 輕鬆管理建築工程項目

Manage construction projects with global leading geospatial platform

全球領先三維瀏覽分析平台

TerraExplorer是一項為所有三維城市建模服務用戶而設的旗艦產品，融合了20年三維空間建模經驗和美國專利技術，可支援大量實時數據融合和串流，並配備全面的應用程式介面，讓用戶可按特定需求和私隱設定，建立切合自身需要的三維空間視覺模型。TerraExplorer具靈活性和互通性，操作簡易，能讓用戶在高清的三維影像環境中，有效檢視、製作、分析和呈現空間數據。

應用於工程管理及監察

除了用於基本測量和分析外，TerraExplorer還配備其他進階功能，包括三維區域測量、圖像比較、動態三維視野範圍和加插陰影。用戶不但可利用TerraExplorer營造逼真的三維視覺效果，還可把資料加到三維地圖上，凸顯特定範圍的具體特性、展示空間關係，以及進行準確的高度及體積分析。準確的三維空間圖像，為項目團隊提供強而有力的影像及分析工具，協助團隊掌握施工進度、偵測可能出現的問題、制定進取而又實際可行的時間表，以及控制預算。

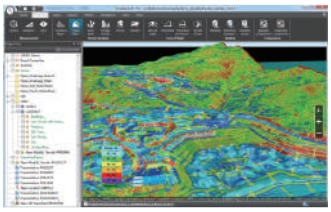
省時省錢

TerraExplorer專為各種三維數據設計，支援原始格式的數據串流。用戶無需花費額外時間和資源預先處理數據，便可享快速的體驗，取得成本效益。通過TerraExplorer的三維渲染技術，工程項目的數碼數據可在綜合平台同步調整。隨着建築工程項目越來越龐大及複雜，信息亦越趨密集，持份者如能共享實時地理空間數據，有助促進溝通和合作。

TerraExplorer功能強大全面，獲政府部門應用於本港不同的工程項目，用途包括工地監察、工程管理、三維無人機測繪、三維城市網格建模、三維變化檢測，以及三維室內測繪。

想暢遊在高清、逼真的三維世界? TerraExplorer現已納入建造業創新及科技基金預先批核名單，快來探索我們的高端平台，隨時、隨地、隨心建立你的空間數據庫！

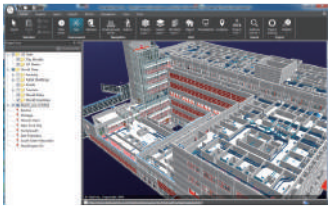
宏圖空間信息顧問有限公司



Global Slope Map

Ocean Curise

Noise Analysis



BIM

Global Leading 3D Viewing & Analysing Platform

Built upon 20 years of 3D spatial modelling experiences and US patented technologies, TerraExplorer is a flagship product for all 3D city modelling users. With support for real-time fusion and streaming of massive data sets, and a full application programming interface, TerraExplorer can be deployed to customise 3D spatial visualisation to specific user requirements and server privacy. Flexibility and interoperability make TerraExplorer a user-friendly and powerful tool to view, prepare, analyse and present spatial data in a high-resolution 3D environment.

Application in Project Management & Monitoring

In addition to basic measurement and analysis tools, TerraExplorer features advanced capabilities, including 3D plane area measurement, imagery comparison, dynamic 3D viewshed and shadow casting. Not only can users deploy TerraExplorer to create realistic 3D visualisations, they can also overlay information onto a 3D map, highlight specific features of a particular area, demonstrated spatial relationship and interpret accurate elevation and volume analysis. The accurate 3D spatial picture provides a powerful visualisation and analysis tools for project teams to keep track of progress, detect possible flaws and attain aggressive yet realistic schedule and budget control.

Time-efficient & Cost-effective

TerraExplorer, designed for all kinds of 3D data sources at its core, supports data streaming in native formats. Without the need to go through time-consuming and expensive data pre-processing, TerraExplorer can be implemented in a quick and cost-effective manner. Thanks to its 3D rendering technology, digital project data can be synchronised in an integrated platform. As construction projects become larger, more complex and data-intensive, instant sharing of geospatial data among multiple stakeholders can facilitate communication and collaboration.

Given the robust and extensive capabilities of TerraExplorer, it has been adopted by government departments in different local projects for site monitoring, project management, 3D drone mapping, city scale 3D mesh modelling, 3D change detection and 3D indoor mapping.

Wanna navigate through high-resolution and photo-realistic 3D environment? TerraExplorer is now on the pre-approved list of the CITF. Come leverage our advanced platform to create your own spatial database where, how and when you need to!

AMBIT Geospatial Solution Ltd