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SUEZ ASIA



# XPRESS



## 苏伊士与澳门大学携手创新研究 SUEZ and University of Macau partner on research innovation

### 致力于保护海洋环境 Commitment to marine protection

苏伊士及旗下澳门自来水股份有限公司，与澳门大学签署合作框架协议，三方通过整合各方在科研和海洋环境保护上的资源与优势，建立高水准的科研合作平台，开展近海环境生态与水处理技术等相关领域的创新性研究，携手保护海洋环境及丰富海洋生物多样性。

这次三方合作，不仅巩固科研人才方面的培养和合作，推动科学与技术的研究和应用，还把学科、人才、科技创新和产业化等优势高度融合，共同打造产学研一体化的完整链条以整体修复海洋环境和生态系统，在促进知识和经验分享的同时开展国际交流。

SUEZ, together with its subsidiary, Macao Water, recently signed a framework agreement with the University of Macau (UM) to develop a robust research partnership platform that will combine the three parties' resources and strengths in scientific research and marine ecosystem protection. Based on the agreement, SUEZ, UM and Macao Water will conduct innovative research on near-shore marine ecosystems and water treatment technology to protect the ocean and its biodiversity.

This tripartite collaboration will advance joint efforts in talent training and development for scientific research. It will also deliver strong academic, talent-related, technological innovation and industrialisation advantages to jointly shape a complete value chain that aligns the powers of industry, academia and research to restore the marine environment and the corresponding ecosystem. While enabling the sharing of knowledge and experience, the partnership also has an international dimension.



澳门三面环海，为支持澳门繁荣稳定，实现经济社会可持续发展，中央政府已将澳门特区海域面积明确为 85 平方公里。这里不仅是中国一级保护动物中华白海豚重要的分布区之一，更因咸淡水交汇、水温适宜而汇聚了丰富的鱼类，使得澳门整个海洋生态系统的保护工作尤为重要。

Macau is a peninsula. To promote Macau's prosperity and stability, and to achieve sustainable economic and social development, the central government clearly marked 85 square kilometres of the sea area as the responsibility of Macau Special Administrative Region. This area is an important habitat for China's white dolphins, a Grade-1 National Key Protected Species in the country. It is also ideal for a large variety of fish, thanks to the confluence of brackish, fresh water and an agreeable water temperature. This makes conservation of the entire marine ecosystem in Macau all the more important.



**澳门大学校长宋永华**  
**Professor Yonghua Song**  
**Rector of the University of Macau**

“作为澳门唯一一所国际化综合性公立大学，澳大致力透过科研促进社会发展，积极拓展区域海洋环境领域的研究是大学的科研战略布局中重要一环。2019 年澳门大学科技学院成立区域海洋研究中心，深入开展海洋领域相关前沿课题研究、助力澳门社会与粤港澳大湾区的可持续发展。我们相信这次与苏伊士及澳门自来水股份有限公司的战略合作将会成为澳门产学研合作的典范。”

'As the only international comprehensive public university in Macau, we are committed to promoting social development through scientific research, regarding our expanding research on regional ocean as an important pillar of the university's research strategy for the future. In 2019, the UM Faculty of Science and Technology established the Research Centre for Regional Ocean, carrying out in-depth research on cutting-edge topics related to the marine environment and contributing to the sustainable development of Macau and the Greater Bay Area. We believe that this strategic partnership with SUEZ and Macao Water will be a model partnership among industry, academia and research in Macau.'



**苏伊士亚洲地区水务**  
**首席执行官方恒业**  
**Francois Fevrier**  
**Chief Executive Officer of**  
**SUEZ Asia Water**

“这次三方合作意义重大，是我们在保护海洋上的强烈愿望和一致理念的体现。苏伊士集团自 19 世纪末以来已致力于保护和修复自然环境要素：水、土壤和空气。我深信，今天与澳门大学达成的合作，将进一步发挥澳门大学和苏伊士在海洋环境与工程研究领域的特长优势，以及澳门自来水 35 年来在中国水行业优质服务和智慧化管理方面的标杆经验，以产学研模式的深度融合，服务澳门、大湾区的高质量发展和全球海洋生态的可持续发展。”

'This is a significant strategic partnership between the three of us. It is a manifestation of our strong desire and shared purpose for protecting the ocean. Since the late 19<sup>th</sup> century, SUEZ has been committed to preserving and restoring the planet's natural capital: water, soil and air. I am convinced that the partnership we are announcing with the University of Macau today will further harness our strengths in the field of marine studies and environmental engineering, as well as building on the 35-year proven track record of Macao Water in providing quality services and smart water solutions in the Chinese water industry. Through close alignment among industry, academia and research, we will contribute to high-quality development in Macau and the Greater Bay Area, which will promote the sustainability of the marine ecosystem.'



## 苏伊士新创建与中山公用集团合作收购中山中能检测中心 SUEZ NWS partners with Zhongshan Public Utilities Group to acquire Zhongshan Zhongneng Testing Centre



随着人们健康意识的增强，中国正在不断完善环境质量监测体系建设，以提升环境污染治理的成效。社会对大气、水和土壤进行环境质量监测和评估的需求日益增长。苏伊士新创建继 2019 年全资收购澳实中国区的环境检测实验室后，近期与中山公用集团合作，收购中山中能检测中心。这将提升检测中心现有土壤检测和水质检测的能力，并将服务扩展至十多个城市。该中心在中山的 8 个环境检测中心中排名第三，提供在受污染土地、固体废弃物、水（污水及地下水）和空气环境检测服务等方面逾 800 项认证。

As people become more health-conscious, China is continuously improving its Environmental Quality Monitoring (EQM) system to maximise the effectiveness of environmental pollution control. There is a growing demand for EQM and assessment of water, soil and air. Following its 100% acquisition of the environmental testing laboratory business of ALS in China in 2019, SUEZ NWS is partnering with Zhongshan Public Utilities Group to acquire Zhongshan Zhongneng Testing Centre. This will help to strengthen the Centre's existing soil and water quality testing capacity, as well as to expand its services to over a dozen cities. Among 8 environmental testing centres in Zhongshan, Zhongneng Testing Centre ranks 3<sup>rd</sup> in the Zhongshan market providing environmental testing services for contaminated land, solid waste, water (wastewater and groundwater) and air, with certification covering over 800 items.



## 国内首例！苏伊士水务技术与方案将为京能漳山发电厂 打造晶种法脱硫废水处理方案

## First in China! SUEZ-WTS applies seed crystal process to FGD Wastewater Treatment at Jingneng Zhangshan Power Plant

2020 年第一季度，苏伊士水务技术与方案与京能漳山电厂正式签约，为其提供脱硫废水蒸发减量系统工艺包，助力电厂实现废液零排放，打造绿色电厂。这也将是国内首个运用晶种法工艺处理脱硫废水的项目。

京能漳山电厂坐落于山西省东南部长治市丰饶的煤田之中，毗邻漳泽湖，煤、水资源丰富。苏伊士水务技术与方案将为其打造脱硫废水蒸发减量系统工艺包，应用于处理来自发电一期和二期的经预处理后的废水，处理量约 30 立方米/小时。经蒸发减量后，脱硫废水将浓缩至总溶解性固体 (TDS) 大于 200,000 毫克/升，送入下游干化系统处置，最终达成废液零排放的目标。

In Q1 of 2020, SUEZ-WTS signed a contract with Jingneng Zhangshan Power Plant to provide a process package for the FGD wastewater evaporation reduction system. This will support the power plant in achieving zero liquid discharge as well as in upgrading to a green power plant. It will also be the first time in China that FGD wastewater is treated by the seed crystal process.

Jingneng Zhangshan Power Plant is located in a coalfield of Changzhi in southeast Shanxi, next to the Zhangze Lake. The power plant benefits from rich coal and water resources. The SUEZ-WTS' process package for the FGD wastewater evaporation reduction system will be used to treat pre-treated wastewater from the first and second phases of power generation with a treatment capacity of about 30 m<sup>3</sup>/h. After the evaporation reduction process, the FGD wastewater will be concentrated to Total Dissolved Solids > 200,000 mg/l and sent to the downstream drying system for disposal. In this way, the goal of zero liquid discharge will be achieved.



## 苏伊士新创建水务工程获得多个新项目 SUEZ NWS Treatment Infrastructure wins several new projects

### 在内蒙古 / In Inner Mongolia



2020年2月28日和4月17日，苏伊士新创建分别与倍杰集团股份有限公司以及中煤西安设计工程有限责任公司签署合同，为其污水处理项目提供 Desadeg® 高密度沉淀池设备及技术服务，以降低污水硬度和去除悬浮物，确保后续膜处理工艺系统稳定运行。两污水厂的处理能力分别为每日64,800立方米以及15,360立方米。

On 28 February and 17 April 2020, SUEZ NWS signed a contract respectively with BGT Group and China Coal Xi'an Design Engineering Company Limited to provide Densadeg® equipment and technical services to their wastewater treatment plants, so as to minimise hardness and suspended solids from the wastewater. This will ensure stable operation of the subsequent membrane treatment process system. The capacity of the two wastewater treatment plants are 64,800 m<sup>3</sup>/day and 15,360 m<sup>3</sup>/day.

### 在泰兴 / In Taixing

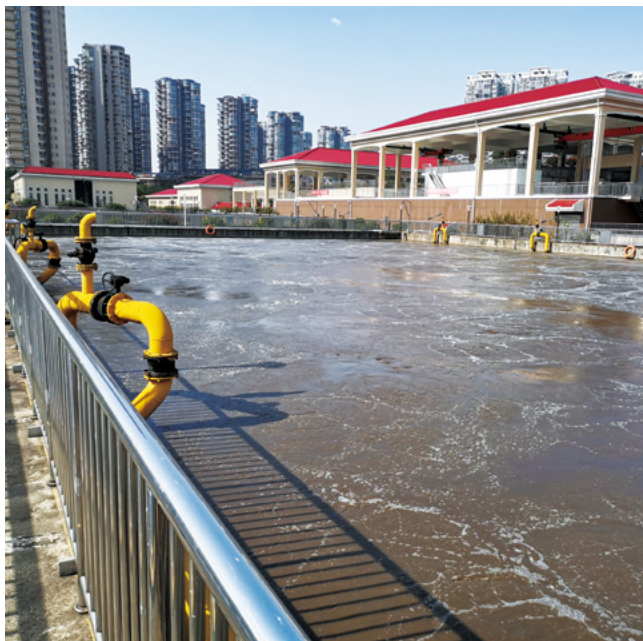
#### 苏伊士首次于中国市场应用 Carbazur DF® 型（双向流）颗粒活性炭吸附池对化工园区污水进行预处理 SUEZ's first application of Carbazur DF® in China for industrial wastewater pre-treatment



2020年4月21日，苏伊士新创建与中交一航局成功签署合同，为位于江苏省泰兴经济开发区，处理规模每日5万立方米的污水处理及生态环境提升 PPP 项目提供设备供货及技术服务，以确保污水的稳定达标排放。其中，Carbazur DF® 型（双向流）颗粒活性炭吸附池是苏伊士首次将这项技术应用于中国市场，同时也是此工艺首次应用于化工园区污水处理的预处理段。

On 21 April 2020, SUEZ NWS signed a contract with the First Harbour Engineering Company of China Communications Construction Company Limited to provide equipment supply and technical services to the latter's Taixing Economic Development Zone PPP Project. The project has a capacity of 50,000 m<sup>3</sup>/day. The deal ensures that wastewater from the project will be compliant with discharge standards. This is the first application of Carbazur DF® in China as well as in wastewater pretreatment in the chemical industry park.

## 在长沙 / In Changsha



2020年4月23日，苏伊士新创建与终端用户湖南北控水务发展有限公司及总包方湖南四建安建筑有限公司签署合同，为位于湖南省长沙市，处理规模为10万立方米/日的苏托垅污水处理厂一期工程提供 Densadeg® 高密度沉淀池及 Denifor V 反硝化滤池的工艺设备供货及相关技术服务。这是苏伊士新创建与北控水务集团第一个水务合作项目，也是 Densadeg® 高效沉淀池和 Denifor V 反硝化滤池在长沙地区又一个符合 IV 类地表水标准的工程应用。该项目反硝化滤池标段也通过招投标方式正式授予苏伊士新创建。

2020年4月27日，苏伊士新创建与湖南园艺建筑集团有限公司签订了合同，为位于长沙市的开福污水处理厂三期提标扩建工程提供设备供货及服务。该污水处理厂现有4座改良式序列间歇反应池，处理规模20万立方米/日，设计出水水质为一级B标准。提标改造后，处理规模达到25万立方米/日，出水水质符合 IV 类地表水标准，明显改善湘江流域的水环境。

On 23 April 2020, SUEZ NWS signed a contract with Beijing Enterprises Water Group Limited (BEWG) Hunan Branch as the end user and Hunan Sijian Installation & Construction Company Limited as the general contractor, to provide Densadeg® and Denifor V equipment and technical services to Sutuo Yuan WWTP Phase I Project. The project, located in Changsha of Hunan Province, has a treatment capacity of 100,000 m<sup>3</sup>/day. It is the first contract between SUEZ NWS and BEWG as well as another application of SUEZ NWS Densadeg® and Denifor V in Changsha that conforms to Class IV surface water quality standards. SUEZ NWS has also won the bid for the Denifor V denitrification filter process package which is related to this project.

On 27 April 2020, SUEZ NWS signed another contract with Hunan Yuanyi Architecture Group Company Limited to provide equipment supply and technical services to the Kaifu WWTP Upgrading Phase III Project in Changsha, which has 4 tanks with modified sequencing batch reactors and a total treatment capacity of 200,000 m<sup>3</sup>/day of Class 1B water quality standards. After upgrade, treatment capacity will reach 250,000 m<sup>3</sup>/day and treated water quality will also meet Class IV surface water quality standards, making an improvement to the water environment along the Xiangjiang River.





## 卫龙获得除污泥合约 Waylung wins a desilting contract



苏伊士新建全资子公司卫龙废料处理有限公司与香港渠务署签署合约,为其位于长沙湾的雨水排水渠去除 1,750 吨污泥。为满足客户要求,卫龙将引入最新研发的可淹没式遥控清污泥机械人。新设计不但可以把工作距离增加一倍至 120 米,卫龙内部研发的液压组件,更可取代旧有庞大的地面液压系统,让机械人的工作更灵活、高效和节能。

Waylung Waste Services Limited (Waylung), a subsidiary of SUEZ NWS, signed a contract with the Hong Kong Drainage Services Department to remove 1,750 tonnes of silt from stormwater drains in Cheung Sha Wan. In order to deliver services that meet customer expectations, Waylung has innovated a new model of unmanned entry submersible desilting robots. This new solution guarantees a working distance of over 120 metres, approximately double the prevailing limit. The tailored built-in hydraulic component can now support sediment removal that does not rely on using bulky machinery on the ground. The innovation will support more flexible robotic movement, higher operational efficiency and lower energy consumption.



## 台湾大发固废资源管理项目签订第二条焚烧线建设合约 Taiwan Dafa R&R Project signs 2<sup>nd</sup> incineration line contract



经过 8 个月严谨的招商评选后,台湾大发固废资源管理项目选定总承包商负责第二条危废焚烧线的设计、采购和施工,预计新焚烧线于 2022 年竣工,设计处理能力为 26,560 吨/年。

After eight months of careful investment appraisal, Taiwan Dafa Recycling and Recovery Project has appointed a contractor for the design, procurement and construction of the second hazardous waste incineration line. With a design capacity of 26,560 tonnes/year, construction is expected to be completed by 2022.



## 按下复工“快进键”，江苏中法水务工程项目马力全开 Jiangsu Sino French Water projects in full swing as work resumes at high speed



常熟市辛庄污水厂扩建工程于2020年3月30日正式开工，目前正在进行桩基及基层砂垫层施工。

The expansion project of Xinzhuang Wastewater Treatment Plant in Changshu kicked off on 30 March, 2020. Pile foundation and sub-base sand cushion layer are currently under construction.



常熟市滨江水厂深度处理升级改造工程项目于2020年2月25日复工，目前正在土建施工中。

The Changshu Binjiang Water Plant's advanced treatment upgrading project resumed construction on 25 February 2020.



重点管网工程于2020年2月24日复工，供水主管道改造工程完成0.8公里，完成年度目标的13%。

The project for major pipe networks was resumed on 24 February, 2020, and 0.8 kilometres of main water supply pipelines has been revamped, achieving 13% of the annual target to date.



常熟市八字桥污水厂扩建工程于2020年3月31日正式开工，目前正在进行桩基及配电间基础施工。

The Changshu Baziqiao Wastewater Treatment Plant's expansion project was launched on 31 March, 2020, with the construction of pile foundation and electrical control rooms' foundation currently underway.



常熟城东水质净化厂建设总规模12万立方米/日，一期规模6万立方米/日，配套中水管网建设及人工生态湿地等。工程于2020年2月22日复工，目前正在土建扫尾和设备安装。

The total construction capacity of the water purification plant project in eastern Changshu is 120,000 m<sup>3</sup>/day. The capacity of Phase I is 60,000 m<sup>3</sup>/day, with complementary reclaimed water pipe network construction and artificial ecological wetland, among others. Following the resumption of the project on 22 February, 2020, the last stage of civil construction and equipment installation is now underway.



常熟市周行污水厂实施提标改造，处理能力将达到2万立方米/日。工程于2020年3月31日正式开工，目前正在进行桩基施工。

The upgrading project for Changshu Zhouhang Wastewater Treatment Plant plans to achieve a treatment capacity of 20,000 m<sup>3</sup>/day. It commenced construction on 31 March, 2020, and is currently laying the pile foundation.

苏伊士集团公布了“我们的宗旨”，作为“塑造苏伊士 2030”战略计划的核心。  
SUEZ Group released 'Our Purpose', which is the core of *Shaping SUEZ 2030*.

## 我们的宗旨 Our Purpose

苏伊士集团自 19 世纪末以来，不断累积和提高专业知识，通过保护人类健康并支持经济增长，助力人们持续提高生活质量。

苏伊士致力于为每个人提供生活所需的环境服务。我们提供各种不同用途的优质供水，并确保这共同资源得到充分保护。我们回收污水和废弃物，并将其转化为新资源。

随着人口增长、气候变化、社会和地理因素的不均衡现象加剧，地球的环境正趋紧急，人类也越来越深刻体会到影响地球环境的后果。每一天，苏伊士致力于保护自然环境要素：水、土壤和空气，守护我们的未来。在苏伊士，我们全力投身于保护和修复自然环境要素，以及未来陆地和海洋的生物多样性。

各地市政、工业客户和居民是我们践行承诺的重要合作伙伴，苏伊士集团与利益相关者团结一致，在环境转型中脱颖而出，发展循环经济的商业模式，开拓创新以应对未来的挑战。

苏伊士团队以投身环境事业为荣，集团的价值观使团队更加强大，每天遍布世界各地的员工正在努力不懈，共建可持续环境！

SUEZ draws on the expertise it has been developing since the late 19<sup>th</sup> century, to help people constantly improve their quality of life by protecting their health and supporting economic growth.

We work to provide access to essential environmental services for everyone. We supply high-quality water, suited to every type of use, and ensure this common good protection. We recover wastewater and waste to convert them into new resources.

Faced with demographic growth, climate change, as well as social and geographical inequalities, people are increasingly exposed to the consequences of the environmental emergency that is affecting our planet. Every single day, SUEZ commits to preserving the fundamental elements of our environment - water, soil, and air - that ensure our future. At SUEZ, we invest in preserving and restoring natural capital, and in the future of biodiversity, both on land and at sea.

As a committed partner of local communities, industry players and citizens, SUEZ mobilises stakeholders to succeed in the environmental transition developing circular business models and innovating to plan for tomorrow's challenges.

Proud of their work and strengthened by their values, SUEZ's teams based in regions throughout the world are shaping a sustainable environment, now.







## 苏伊士新创建上海办公室乔迁 SUEZ NWS Shanghai Office relocation

苏伊士新创建上海办公室于 2020 年 6 月 17 日搬迁至位于上海火车站附近的办公大楼。新办公室鼓励协同合作，为我们的员工提供更智能和更环境友好的工作环境，同时也将促进实现多元融合。

SUEZ NWS Shanghai Office was relocated to a new office building close to the Shanghai Railway Station on 17 June 2020. The new office provides smarter, more collaborative and environmental friendly workspaces that promote diversity and inclusion.



智能及环境友好  
smart & environmental friendly



合作无间的工作环境  
more collaborative workspaces

推动废物综合管理  
integrated waste management



设置母婴室等员工友善设施  
staff-friendly facilities like nursing room

## 苏伊士新创建连续 17 年蝉联中国水业十大影响力企业 SUEZ NWS ranked among Top 10 Most Influential Water Companies in China for 17<sup>th</sup> consecutive year

苏伊士新创建成为自评选以来连续 17 年获得该奖项的唯一一家外资企业，充分反映了社会各界对苏伊士新创建核心价值的认同。苏伊士亚洲地区首席执行官郭仕达感谢客户、伙伴及社会各界一直以来对集团的认可，并借此机会分享了集团在中国的发展战略。**苏伊士新创建将优先发展三大领域的业务：**

SUEZ NWS became the only foreign company to have achieved the prestigious ranking for the 17<sup>th</sup> consecutive year, since the list's inception. The award is a resounding testament to the broad recognition of the Company's core values. Steve Clark, CEO of SUEZ Asia, thanks clients, partners and all walks of society for their affirmation of SUEZ, and takes the opportunity to share the Group's development strategy in China.

### The company will prioritise three areas for development:



固废领域 Waste Sector

将重点发展危废市场，目前苏伊士在中国内地正在建设和运营的危废项目有 9 个，计划今后每年增加两个新项目。此外，还有废弃物的回收利用、废转能、土壤修复等。

Hazardous waste management is a key area. Currently SUEZ has built and operated 9 hazardous plants in mainland China. The goal is to have two new projects every year. And to recycle waste material for reuse, or to produce energy and soil remediation.



工业领域 Industrial Sector

中国水务市场依然具有巨大的发展潜力，苏伊士将发挥收购 GE 水处理的协同效应，在这一重要领域进一步发展，满足中国对工业污染治理的强大需求。

The water sector in China still presents significant growth potential, especially considering strong demand from the industries. With the synergies from the GE Water acquisition, SUEZ will grow further in this important sector to meet China's strong demand from industry.



智慧解决方案领域 Smart Solutions

对于传统的市政水务而言，智慧水务将成为新的增长引擎。在这方面，苏伊士不同于技术供应商，我们不仅提供技术，而且拥有广泛的运营专业知识，使得我们能够更好地适应和优化智慧解决方案，提高运营效率。为能给客户带来更多智慧化的解决方案，苏伊士将在 2023 年前使研发创新和数字化方面的投资增加 50%。

For conventional municipal water services, smart water solutions will become the new growth engine. In this regard, SUEZ is different from technology vendors in that it not only offers technologies, but also has tremendous operational expertise which allows it to better adapt and optimise the smart solutions for operational efficiency. To deliver more smart solutions to clients, SUEZ will increase its investments in R&D, innovation and digitisation by 50% by 2023.

## 苏州中法获评 2019 年度环境管理示范企业 Suzhou Sino French awarded Demonstrative Enterprise in Environmental Management for 2019



2020年4月20日，苏州中法荣获苏州工业园区2019年度环境管理示范企业，表彰了合作公司在环境管理方面的卓越成绩。

On 20 April 2020, Suzhou Sino French was awarded the Demonstrative Enterprise in Environmental Management for 2019 by the Suzhou Industrial Park. The accolade was given in recognition of the JV's outstanding achievements in environmental management.

## 坦洲自来水获评 2019 年度安全生产工作先进单位 Tanzhou Water named Advanced Unit of Production Safety Work 2019



2020年4月10日，坦洲自来水荣获“2019年度中山市坦洲镇安全生产工作先进单位”，充分肯定了合作公司安全生产的监督管理。

On 10 April 2020, Tanzhou Water was awarded the 'Advanced Unit of Production Safety Work in Tanzhou, Zhongshan for 2019'. The accolade was an affirmation of the JV's management of production safety.

## 重庆中法供水“特里腾智慧报装系统”成功获得国家商标注册证书 Chongqing Sino French Water's 'TRITON Smart Installation System' obtains national trademark registration certificate



2020年3月17日，重庆中法供水申请注册“特里腾智慧报装系统”商标，经中华人民共和国国家知识产权局核准注册成功，这是继2019年获得由中华人民共和国国家版权局颁发的《计算机软件著作权登记证书》之后，合作公司在知识产权方面的又一次突破。系统是合作公司第一个自主研发通过微信公众号向所有企事业、个人用户开放使用的产品，让用户足不出户便能办理供水业务，大大提升客户服务满意度。

On 17 March 2020, application for the trademark registration of 'TRITON Smart Installation System' was approved by the China National Intellectual Property Administration. This marks another breakthrough in intellectual property rights for the JV, after obtaining the Copyright of Computer Software Registration Certificate issued by the China National Copyright Administration in 2019. The system is the JV's first independent R&D product. It opens to all enterprises and individual users via WeChat official account, allowing them to manage water supply issues from anywhere, thereby greatly improving customer service satisfaction.

## 重庆“智慧工地”成功入选重庆市2020年第一批工业互联网试点示范项目 Chongqing's 'Smart Construction Site' shortlisted for the city's first batch of Industrial Internet Pilot Demonstration Projects 2020



重庆中法环保研发中心自主创新研发的“重庆水务集团智慧工地管理平台”成功入选重庆市经济和信息化委员会2020年第一批工业互联网试点示范项目。该智慧工地系统平台利用了边缘计算技术，实现了监控视频的“秒开”；使用了带芯片的安全帽，实现了全工地无死角的人员定位；采用了人脸识别算法（PFLD）、神经网络等算法实现了现场人员识别、安全帽脱帽抓拍、车辆识别等功能。

The 'Chongqing Water Group Smart Site Management Platform', independently developed by Chongqing Sino French Environmental Excellence R&D Centre, was shortlisted for the first batch of Industrial Internet Pilot Demonstration Projects 2020 by Chongqing Municipal Economy and Information Commission. The smart site platform uses edge computing technology to play surveillance videos quickly. It also allows the use of a safety helmet, embedded with a chip, to locate personnel across the whole site, eliminating blind angles. Practical Facial Landmark Detectors (PFLD), neural networks and algorithms are also being used to achieve on-site personnel identification, to capture instances when safety helmets are removed, as well as to identify vehicles and perform other functions.



## 上海化工中法获得多项荣誉 SCIP Sino French wins several honours

2020年3月，上海化工区管委会向上海化学工业区中法水务授予了“2019年度上海化学工业区企业安全生产工作达标单位”和“2019年度上海化学工业区应急救援先进单位”两项荣誉，这表彰了合作公司于2019年在安全生产、应急救援两项工作上的良好成绩，肯定了员工在两项工作上做出的努力。

此外，上海化工中法荣获化工区“安康杯”竞赛活动“优秀组织单位”以及“2019年度上海化工区宣传工作一等奖”，上海化工中法水研究中心也被授予“全国工人先锋号”称号。

In March 2020, the SCIP Administration Committee presented two honours to SCIP Sino French, namely 'SCIP In-Spec Unit of Production Safety Work 2019' and 'SCIP Advanced Unit of Emergency Rescue 2019'. The accolades recognise the achievements of the JV as well as the stellar efforts of all its staff in production safety and emergency rescue.

SCIP Sino French won the 'Outstanding Organiser Award' of the 'Safety & Health' Contest and the 'First Prize in Publicity Work of Shanghai Chemical Industry Park 2019'. SCIP Water Research Centre was also named 'Pioneer of National Workers'.

## 重庆长寿中法职安健工作成效显著，积极践行环保责任获认同 Chongqing Changshou Sino French recognised for its remarkable performance in H&S and environment protection efforts



重庆长寿中法因职安健工作成效显著、安全工作尽职尽责被评为长寿经开区“2019年度安全考核优秀单位”。另外，由于合作公司严格贯彻落实应急值班值守制度，获评为长寿经开区“2019年度应急值班先进企业”。

此外，重庆长寿中法连续3年获经开区入驻企业环保工作“先进集体”称号，连续2年获责任关怀工作“最佳组织单位”称号和应急管理工作“先进集体”称号，以表扬合作公司的卓越绩效。合作公司一直以服务企业客户、守护碧水蓝天为己任，助力长寿经开区的绿色发展。

Chongqing Changshou Sino French was rated as the 'Excellent Unit of Safety Assessment 2019' in the Changshou Economic and Technological Development Zone for its remarkable performance in health and safety as well as its commitment to safety work. Additionally, its strict implementation of emergency duty system earned the JV the 'Advanced Enterprise in Emergency Preparedness 2019'.

Chongqing Changshou Sino French has won the title of 'Advanced Collective' in environment protection in the Changshou Economic and Technological Development Zone for three consecutive years. It has also been the 'Best Organiser' in Corporate Social Responsibility and the 'Advanced Collective' in Crisis Management for two consecutive years, thanks to its remarkable performance. Over the years, the JV has been committed to partnering with industrial clients and working on environment protection to support the green development of the Changshou Economic and Technological Development Zone.

## 2019 年苏伊士新创建创新奖“推广应用奖”分享 Sharing of SUEZ NWS Innovation Trophies 2019 'Best Promotion Award'



智能电气设计解决方案的全面推广应用

Full Promotion & Application of Smart Electrical Design Solution



**建立 Excel 和绘图软件 Pre-planning 的数据流，使图纸设计的数据导入更准确高效。**

**Establishment of data flow between Excel and Pre-planning softwares for more accurate and efficient data input of design drawings.**

将电气设计方式由传统的“面向图形”转变成“面向对象”，建立 Excel 和绘图软件 Pre-planning 软件之间的数据流，将图形与数据紧密地结合在一起，实现了高效设计的目标。

基于工艺专业提供的设备和仪表的数据信息，根据建立好电气元件选型数据库，自动选型、自动调用，形成数据流，电气设计图纸中大量数据和信息可以由软件调用和导入，自动生成电气盘柜的单线图和原理图，减少人为操作和因技术能力等个体差异而产生的失误，从而保证电气设计的高效和高质。

The electrical design method is changed from the traditional graphic-oriented design to an object-oriented design. With the establishment of data flow between Excel and Pre-planning softwares, graphics and data can be closely combined for a highly efficient design.

Data flow, based on input data of equipment information provided by the technology, is formed through the establishment of electrical component selection database, automatic selection as well as automatic call. A large amount of data and information in electrical design drawings can be invoked and imported by softwares, and then generated into single-line diagrams and principles of electrical panel and cabinet automatically, which reduces manual operation and avoids errors caused by individual differences such as technical competence, thereby ensuring high efficiency and quality of the electrical design.

目前已有 5 个执行项目：邯郸污泥、邯郸污水、浦东污泥、高栏港污水和西安航空基地污水

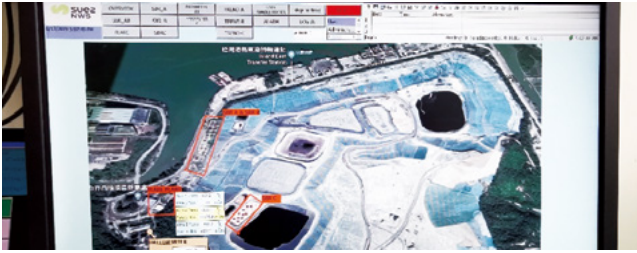
Currently 5 projects under execution: Handan sludge, Handan wastewater, Pudong sludge, Zhuhai Gaolangang wastewater and Xi'an CAIB wastewater





## 以可编程逻辑控制器实现数据记录的应用延续

### Continuity of Data Logging Application through PLC Programming



苏伊士新创建在运营中非常重视安全、效率、技术与服务，而这项创新完全符合公司在这些方面的要求。PLC 变成数据记录的特点是将所有记录的数据集中在位于操作控制或管理办公室的 SCADA 系统中进行实时的数据监控和分析。在安全性方面，这项创新是为了避免工作人员进入危险区域或未授权区域进行数据收集，进而提高效率、降低运营成本。利用 PLC 的先进技术，只需修改 PLC 程序即可在我们现有的中转站和垃圾填埋场自动化控制系统中轻松应用实时监控和数据记录，减少了系统的硬件。虽然这不是合同中的要求，但是在新项目中应用这一创新，可为我们的客户提供满意和放心的服务。所有记录都传输到安全的地方进行数据分析，无需任何额外成本。

该项目是 2018 年苏伊士新创建创新奖最佳创新创意获奖项目“可编程逻辑控制器编程实现数据记录应用”的延续。去年项目团队将实时数据记录应用的 PLC 编程应用于我们其中一个项目中进行测试，最终取得了良好的效果，因此他们将为其他客户引入这项创新，并广泛应用于其他项目。

SUEZ NWS attaches great importance to safety, efficiency, technology and service in its daily operations, and all these requirements can be fully met by data logging through PLC programming. One feature of this innovation is that all the logged data can be centralised in the SCADA system located in the operation control room or management office for real-time monitoring and data analysis. It can also minimise the need of staff entering dangerous or unauthorised areas for data collection, and help improve efficiency as well as reduce operation cost. With PLC's advanced technology, it is possible to achieve real-time monitoring and data logging by only modifying the PLC programme, while at the same time reducing the system hardware required. Even though this is not stipulated in the contract, the application of such innovation in new projects will provide satisfaction and assurance to our clients.

A continuation of SUEZ NWS Innovation Trophies 2018's Best Innovation Award project titled 'Data Logging Application through PLC Programming', this project has been put into further practice. Last year, the project team applied PLC in one of our projects as testing for real-time data logging, and ultimately achieved good results. This innovation will be introduced to other clients and widely applied in projects with financial and operational benefits.

## 参观考察 互访交流 Visits and Exchanges

### 芥园 Jieyuan



▲ 2020年4月30日，天津水务集团总经理韩培俊一行来到天津中法芥园巡查安全稳定供水情况。

On 30 April 2020, a team led by Han Peijun, General Manager of Tianjin Water Group, visited Tianjin Sino French Jieyuan to check the safety and stability of its water supply.

### 长寿 Changshou



▲ 重庆长寿中法接受长寿区委及经开区管委会领导调研指导。

Chongqing Changshou Sino French receives research guidance from the management of Changshou Standing Committee and the Economic & Technological Development Zone.

### 坦洲 Tanzhou



▲ 2020年3月11日，中山市坦洲镇党委委员到坦洲自来水开展调研工作。

On 11 March 2020, Zhongshan's Tanzhou Party Committee Members visited Tanzhou Water Supply to conduct research work.

### 常熟 Changshu



▲ 2020年4月10日，江苏中法水务接受水资源管理制度技术核查。

On 10 April 2020, Jiangsu Sino French Water accepted technical verification of water resource management system.

### 启东 Qidong



▲ 2020年3月17日，启东危废项目接受江苏省生态环境保护厅现场审查。

On 17 March 2020, Jiangsu Provincial Department of Ecology and Environment conducted a site audit of Qidong Hazardous Waste Treatment Project.

### 青岛 Qingdao



▲ 2020年4月30日，海润集团视察青岛海润中法安全生产工作。

On 30 April 2020, Hairun Group inspected Qingdao Hairun Sino French for safety production.



## 坦洲自来水组织员工清理河道 Tanzhou Water organises its staff to clean the river



2020年5月4日,坦洲自来水员工来到西灌河,清理河道垃圾,以实际行动保护水资源及提升公众环保意识。

On 4 May 2020, Tanzhou Water staff cleaned the banks of the Xiguan River to raise the awareness of water resource protection.

## 苏伊士文化多样性摄影比赛 SUEZ cultural diversity photo contest



2020年5月21日国际文化多样性日,苏伊士举办文化多样性摄影比赛以展现苏伊士的多元文化。苏伊士集团9万名员工,国籍不一,性别、个人信仰、职业发展以及社会背景等方面都不尽相同,展现着我们丰富的多元文化。

To mark the International Day for Cultural Diversity on 21 May 2020, SUEZ held a cultural diversity photo contest. Comprising different nationalities, genders, personal beliefs, professional development and social backgrounds, SUEZ's 90,000 staff truly reflect the multicultural diversity of our society.

## 苏伊士新创建响应“全球资源回收日” SUEZ NWS supports Global Recycling Day



苏伊士新创建组织“回收英雄”活动，鼓励员工分享废塑料回收再用及升级再造的方法，使塑料废弃物获得重生。

SUEZ NWS organised a 'Recycling Hero' event to encourage its staff to share good practices in plastic waste recycling to give such waste a second life.

## 台湾仁武废转能项目捐赠婴幼儿奶粉予弱势家庭 Taiwan Renwu Waste-to-Energy Project donates infant milk powder to underprivileged families



仁武废转能项目与高雄市政府社会局合作，举办员工认购奶粉捐赠活动，把奶粉捐给高雄市弱势家庭。

The Renwu Waste-to-Energy Project recently organised a donation campaign for its staff, who donated infant milk powder to underprivileged families in Kaohsiung through the city's Social Affairs Bureau.

## 重庆中法供水开展“世界读书日”活动 Chongqing Sino French hosts World Reading Day event



2020年4月23日“世界读书日”之际，合作公司利用“汇流网上图书馆”平台，开展读书活动，采用便捷的网上借阅方式，鼓励员工培养阅读习惯。

On the occasion of World Reading Day on 23 April 2020, the Chongqing Sino French JV made use of an online library platform to carry out reading activities, whereby the staff were encouraged to cultivate reading habits through a convenient online book loan service.

## 苏伊士新创建旗下合作公司积极参与献血活动 SUEZ NWS JVs take active part in blood donation campaigns



### ◀ 江苏中法水务 Jiangsu Sino French Water

2020年3月19日，江苏中法水务员工代表积极参与城投公司组织的无偿献血活动，帮助有需要的人。

On 19 March 2020, Jiangsu Sino French Water staff representatives participated actively in a blood donation drive organised by City Investment Company to help people in need.



### ◀ 坦洲自来水 Tanzhou Water

2020年4月13日，坦洲自来水组织员工参加献血活动，帮助有需要的人。

On 13 April 2020, Tanzhou Water staff participated in a blood donation activity to help those in need.



### ◀ 上海化工中法 SCIP Sino French

2020年4月17日，上海化工中法组织员工积极响应化工区医疗中心号召，参与无偿献血活动。

On 17 April 2020, SCIP Sino French staff responded to a call from the Park's medical centre to participate in a blood donation campaign.

## 苏伊士新创建“世界水日”活动 SUEZ NWS organises activities to support World Water Day



### 在澳门 / In Macau

2020年3月22日世界水日，澳门自来水通过微信公众号推文，介绍全球暖化导致水资源减少的现象，并加入问答及有奖互动环节，呼吁广大市民在日常生活中高效用水。脸书专页也发布短片“澳门用水背后的故事”，以历史提醒大家珍惜用水。

Macao Water released a WeChat posting to address the issue of water shortage due to global warming on World Water Day on 22 March 2020. The interactive post featured a poll and a prized game in which the public could share their views on water-saving practices in their daily life. Its corporate Facebook page also published a video clip recapping how Macau had coped with water shortage over the years, calling for concerted efforts in water conservation.



### 在常熟 / In Changshu

江苏中法水务通过专题微信推送，以视频介绍水厂和污水厂的运营，见证每一滴水的来之不易，并了解污水处理及循环利用过程。

Jiangsu Sino French Water introduced the operation of water and wastewater plants through a video via WeChat, emphasising the value of water and providing an insight into wastewater treatment and recycling processes.



### 在重庆 / In Chongqing

重庆中法供水发文“关于一杯水的那些事”，呼吁广大用户在日常生活中能行动起来，与家人朋友分享保护水资源的方法。

Chongqing Sino French Water posted an article titled 'The Story About A Glass of Water', urging people to act together in their daily life and share tips about water resources conservation with their family members and friends.

重庆长寿中法携手长寿区生态环境局共同开展“坚持节水优先，建设幸福河湖”水知识线上分享活动，为建设节水型社会营造良好舆论氛围。

Chongqing Changshou Sino French, in partnership with Changshou Ecological and Environment Bureau, organised an online sharing session based on the theme of 'Water Conservation as Top Priority for a Better Environment', which aims to promote public awareness of a water-saving society, thereby facilitating its establishment.



### 在塘沽 / In Tanggu

塘沽中法向员工发出节水倡议书，号召员工“节水从身边做起，人人争做节水模范”。

Tanggu Sino French came up with a water-saving initiative for its staff, encouraging the latter to adopt water-saving practices and aim to become role models in water conservation.

# 苏伊士东南亚慷慨捐献，支持社区抗击新冠肺炎

## Acts of generosity by SUEZ Southeast Asia to support local communities to combat COVID-19



### 泰国 / Thailand

苏伊士固废资源管理泰国团队向 49 个村庄以及 1 个城市捐献食物以缓解新冠肺炎疫情对居民的影响。春武里废转能项目向当地医生、护士以及病人家属提供 100 份食物，成为其他商业机构学习的榜样。

Our Thailand Recycling & Recovery team donated food items to 49 communities and 1 city, in a bid to offer relief to families affected by the COVID-19 pandemic. Chonburi Clean Energy supplied 100 portions of food to doctors, nurses and families of the sick in a local hospital. The act inspired and set a good example for other business organisations.



### 印尼 / Indonesia

苏伊士在印尼棉兰的水处理项目团队向附近社区受新冠肺炎疫情影响生计的居民和团体捐献 200 袋食物包。

TLM, SUEZ's water operations team in Medan, Indonesia, donated and distributed 200 packages of essential groceries to surrounding communities to provide relief to families and groups affected by the COVID-19 pandemic.



### ◀ 苏伊士新创建水务工程 2020 抗疫迎春健步走活动拉开帷幕

#### Launch of SUEZ NWS Treatment Infrastructure Spring Walkathon 2020

苏伊士新创建水务工程于4月20日拉开了为期2个月的“2020 抗疫迎春健步走”活动的序幕。本次活动通过手机“微信运动”平台计步，参与者达到要求的步数可获得奖品。210多位员工积极参与。

SUEZ NWS Treatment Infrastructure launched the 'Spring Walkathon 2020' event on 20 April, which was scheduled to last two months. Steps were being counted via the 'WeChat Sports' platform. Participants who managed to log the required number of steps would win a prize. Over 210 staff participated in this event.



### ◀ 澳门自来水进行化学品泄漏演练

#### Macao Water conducts chemical leakage drills

澳门自来水进行了漂水泄漏演练及手动添加聚合氯化铝演练。两场常规演练中，员工按照既定程序处理突发事件，冷静评估现场情况并随机应变。

Macao Water recently conducted two regular drills to prepare for chemical leakage. The staff handled the emergency according to crisis management procedures and assessed the situation with calmness and flexibility.



### ◀ 苏州中法举行趣味运动会

#### Suzhou Sino French organises interesting sports activities

2020年4月28日，苏州中法举行了趣味运动会，员工全程投入参与，加强了员工之间的凝聚力。

On 28 April 2020, Suzhou Sino French organised interesting sports activities for all its staff to enhance internal cohesion.



### ◀ 苏州固废资源管理项目举行危险废物泄漏演练

#### Suzhou Recycling & Recovery Project organises hazardous waste leakage drill

苏州固废资源管理项目于2020年3月19日举行了危险废物泄漏现场应急处置演练活动。

On 19 March 2020, Suzhou Recycling & Recovery Project held an on-site emergency response drill for hazardous waste leakage.

## 苏伊士新创建组织线上培训 SUEZ NWS holds online trainings

面对新冠疫情，苏伊士新创建市场部利用线上平台积极开展技术推广活动，分别为中化集团辖下各设计院介绍工业废水处理方案；为武汉市给排水工程设计院、湖北建科科技集团介绍水环境治理和市政污水提标改造前沿技术；与第三方平台合作推出了环保企业战“疫”系列技术讲堂，吸引近 2,500 人次观看。



**2,500 人次 / audience**

观看线上培训

view online trainings

SUEZ NWS' Marketing Department had been promoting the Group's technologies and solutions via various online platforms during the outbreak of COVID-19. It made use of the Internet to introduce industrial wastewater treatment solutions to SINOCHEM Group's design institutions; recommended leading technologies of water environment control and municipal wastewater treatment plant upgrade to Wuhan Water Supply and Drainage Engineering Design Institute and Hubei Jianke Technology Group; and teamed up with a third-party platform to launch online series lectures on coping with the COVID-19 outbreak with the help of technology for environmental protection companies, attracting an audience of nearly 2,500.



◀ 苏伊士新创建水务工程于 2020 年 3 月 20 日，特邀西安交通大学副教授杨树成，在线上举办了主题为“废水厌氧生物处理的理论与技术应用”的月度研讨会，共有 100 余名来自水务工程、水务运营的同事参加。

On 20 March 2020, SUEZ NWS Treatment Infrastructure invited Yang Shucheng, Associate Professor of Xi'an Jiaotong University, to hold an online monthly seminar based on the theme of 'Theory & Application of Anaerobic Biological Wastewater Treatment', which saw an attendance of over 100 participants from Treatment Infrastructure and Water Operations.



◀ 苏伊士新创建水务运营于 2020 年 3 月 4 日举办了主题为“2019 年水质工艺管理汇报分享”的线上培训第一讲，超过 140 名来自水务运营、水务工程及合作公司的员工参加。

On 4 March 2020, SUEZ NWS Water Operations held an online training session based on the theme of 'Sharing of Water Quality Process Management Report 2019', which was attended by over 140 staff from Water Operations, Treatment Infrastructure and the JVs.



◀ 上海化工升达员工参加各类线上培训课程，让同事在疫情期间继续学习。

SCIP SITA offered various online training courses to support staff learning during the COVID-19 pandemic.

## 苏伊士新创建举办不同活动庆祝国际妇女节 SUEZ NWS holds activities to celebrate International Women's Day



苏伊士新创建北京办公室以及苏伊士新加坡办公室举办以“HeforShe”为主题的妇女节献花活动。

SUEZ NWS Beijing Office and SUEZ Singapore Office presented bouquets to female staff based on the theme of 'HeforShe'.



塘沽中法为女员工组织线上摄影比赛，共收到 102 幅作品。

Tangu Sino French organised an online photography contest, with a total of 102 entries received.



江苏中法水务通过微信推文展示女员工工作和生活短片，赞美女性扮演不同的角色。

Jiangsu Sino French Water published a video via its official WeChat account, which depicted the work and life of its female staff, applauding women for the different roles they play.



重庆中法供水为女员工举办刺绣和习字活动。

Chongqing Sino French Water organised an embroidery and calligraphy activity for its female staff.



天津中法芥园为女员工送上蛋糕，欢度佳节。

Tianjin Sino French Jieyuan prepared a cake and held a celebration for its female staff on duty.



## 利益冲突 Conflict of interests

利益冲突是指你在做判断时可能受到与公司道德规范不一致的其他利益影响，请留意下列要点以避免违反集团道德要求的行为：

- 将自己了解到的任何利益冲突告知管理层和 / 或道德主任。
- 保留已评估和报告所有潜在利益冲突的证明记录。
- 如果你担任民选职衔，请确保在职业责任与民选公职之间划定明确的界限。

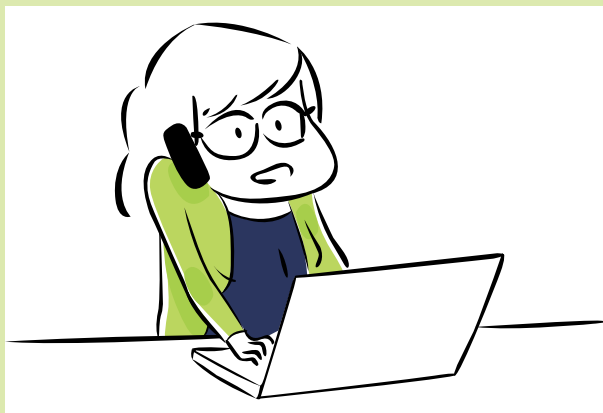
A conflict of interest is a situation in which the judgment of a person may be influenced by a secondary interest, distinct from the code of ethics of the Company, please keep the following key points in mind to avoid any non-compliance to the Group's Ethics requirements:

- You should inform your management and/or ethics officer about any conflict of interest that you are aware of.
- Keep a record that proves that any potential conflicts of interest have been assessed and reported.
- If you hold an elected position, make sure that you establish a clear separation between your professional responsibilities and your role as an elected official.



**ethics.asia@suez.com**

欢迎通过电邮咨询  
please email for enquiries



### 案例 case example

Jenny 是你的一位平面设计师朋友。你打电话给她，因为有件工作上的紧急任务——公司让你对网站进行全面改版，所以你想找她帮忙：“Jenny! 这个任务你能做吗？我们现在定好价格，你能立即开始吗？”

Jenny is your friend who works as a graphic designer. You are calling her about an urgent work matter – your company has asked you to do a complete revamp of the corporate website, so you would like to ask Jenny for help, 'Jenny! Can you take up this job? If we agree on a price now, can you start straight away?'

### 问题

就这个案例，你认为下列哪些陈述可减低构成道德问题的风险？

1. 这是个紧急任务。
2. 员工没有向其经理告知利益冲突。
3. 管理层要求重新设计网页。
4. 以上选项都不是。

### 答案

正确答案是 4. 仅因为工作紧急或管理层提出要求。并不意味着你可以基于友情做出决定，从而违反规定。即使设计者没有收取太高的费用，员工也应该将潜在的利益冲突告知管理层和 / 或道德主任，并遵守适用的采购程序。

### question

In this case, which of the following statements do you think can reduce the risk on any unethical issues?

1. It is an urgent job.
2. The employee has not told her managers about the conflict of interest.
3. The management has asked for the website to be redesigned.
4. None of these options.

### answer

The correct answer is 4. Just because a job is urgent or has been requested by your management does not mean that you can make a decision based on friendship interests and thus breach the rules. Even though the designer is not charging very much, the employee should inform her management and/or ethics officer about the potential conflict of interest and follow the applicable purchasing procedure.



## 苏伊士亚洲 2020 第一季度健康安全关键指标 SUEZ Asia Q1 2020 H&S KPIs



第一季度事故发生率 FR in Q1

2019 **2.73** 2020 **1.83**



第一季度事故严重程度 SR in Q1

2019 **0.18** 2020 **0.12**



事故发生率全年目标

FR Target in 2020

**< 2.52**

事故严重程度全年目标

SR Target in 2020

**< 0.21**



## 新冠肺炎应急回顾 COVID-19 Return on Experience (REX)



从 2020 年 1 月开始，苏伊士亚洲各地逾 110 家运营现场、办公室或在建项目建立或改进了针对新冠肺炎的应急预案，尽全力将疫情对生产运营和服务的影响降低到最小，并有效地保护了每一位员工的健康和安全。

As early as January 2020, over 110 operational sites, offices or construction projects of SUEZ Asia have already established or made improvements to its COVID-19 emergency response plan and have managed to minimise the impact on operations and services, effectively protecting the staff against the pandemic.



随着疫情在亚洲各地逐渐得到控制或缓解，苏伊士亚洲总部以及各业务单元已经开始组织对新冠肺炎应急流程进行系统分析，以识别改进现有应急管理体系和方法，尤其是在应急预案的建立改进、早期预警、应急沟通机制、应急物资的准备等方面。

With the situation controlled or relieved in Asia, the SUEZ Asia Headquarters and its business units have begun systematic review of the emergency response process during the COVID-19 period in order to identify and implement improvement plans for the existing management system and practices, especially where quality of crisis plans, early alert, emergency response communication and preparedness of emergency supplies are concerned.



## 创新实践：智慧上锁指示牌管理系统 An innovation practice: Smart LOTO Programme

智慧上锁指示牌管理系统使上锁示牌作业过程管理智能信息化，实现了蓝牙锁具权限智能控制和精准定位管理，通过许可权限和定位权限实现上锁解锁双重保障，防止未上锁或误上锁等人为误操作，提高了上锁示牌作业过程的安全可靠性。

The Smart Lockout-Tagout (LOTO) Management System enables smart information of the lock-up operation process and realises smart control and precise position of Bluetooth locks. Through permission rights and positioning rights to achieve double protection of lock or unlock and prevent unauthorised or mislocked human error, it improves the security of the Lockout-Tagout operation process from the perspective of intrinsic safety.



### 该系统具有以下创新点和优势：

#### The innovations and advantages are as follows:

1. 项目在国内水务行业及苏伊士范围内均属于首次应用。
  2. 智慧上锁指示牌管理系统实现了作业过程信息化管理，通过系统报警功能，实现作业全过程智能监控。
  3. 借助水厂定位管理系统实现锁具精准定位管理（精度 < 20 厘米），确保锁具在指定位置上锁。
  4. 与设备管理系统对接，实现设备维修工单与上锁示牌作业无缝链接。
  5. 客户端嵌入企业微信应用，可随时随地查询信息、执行系统操作。
  6. 现场采用电子示牌，实时更新工单状态，提高作业可视化。
  7. 维修数据统计分析，为设备管理提供科学有效的依据。
1. This project is applied for the first time in both the domestic water industry as well as in SUEZ.
  2. The Smart LOTO management system realises information management of the operation process and smart monitoring throughout the whole process with the help of a system alarm function.
  3. With the water treatment plant positioning management system, the precise positioning management of the lock (accuracy < 20 cm) ensures that the lock is locked at the designated position to avoid human error.
  4. By integrating with the equipment management system, it is possible to achieve seamless linking between equipment maintenance work orders and LOTO operations, such that each equipment maintenance work order performs the correct lock-up sign programme.
  5. The corporate WeChat application can be embedded with a client system to check information and perform operation anytime and anywhere in a smart and convenient way.
  6. Digital LOTO is applied at site to real-time update work order status, which enhances job visualisation management.
  7. The statistical analysis of maintenance data can provide a scientific and effective basis for equipment management.





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