



Turner & Townsend

Capability statement 执行能力陈述书

**High technology
manufacture**

高科技制造业

making the **difference**

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Making the difference 创造与众不同的价值

Market-leading

引领市场

We are a market-leading capital programmes professional services company trusted to drive better business outcomes for our clients across all sectors. With a heritage rooted in cost and commercial management we have a deep and tacit understanding of capital programmes, and apply this expertise to drive industry best practice and innovation.

作为深受信任的市场领先的资本项目专业化服务公司，我们旨在帮助所有领域的客户取得更佳的商业表现。我们深耕于成本和商业管理，深谙资本项目的运行之道，并运用专业知识推动行业最佳实践的发展，实现变革。

Independent

独立机构

With complete independence from the supply-chain, we put client's interests first, protecting you by providing an un-conflicted and uncompromised service to solve your specific challenges.

作为一家完全独立于供应链之外的公司，我们将客户利益放在第一位，提供非冲突性和非折中性的服务，确保解决您的具体问题。

Trusted partners

值得信赖的合作伙伴

We turn data into insights to confidently make informed decisions faster, achieving higher levels of performance and minimising risk for our clients.

我们在数据中得出见解，所以有信心能很快地做出明智的决策，从而将客户的风险最小化并实现更好的业绩。



Where we work 我们的足迹

Global expertise delivered locally

全球专业 服务本地

We are one global business providing a consistent quality of service to deliver great outcomes for your projects, wherever they are.

我们是一家全球化的公司，可为全球各地的客户提供始终如一的服务，交付优质的项目成果。

Operating in over 130 countries around the world, our teams work together to tackle projects collaboratively to a common set of high standards to make sure you see results quickly.

业务范围覆盖全球 130 多个国家，我们的团队相互协作，共同按照统一的高标准处理项目，确保您在短时间内就可以看见成效。

As we continue to grow our footprint we transfer knowledge between people, regions and sectors. This extensive knowledge and global experience helps us to think and innovate ahead of the market to deliver the best outcomes for our clients.

随着我们不断地扩大业务版图，我们在不同的人、地区及领域间传递知识。丰富的知识及全球化的经验可以让我们采取领先于市场的思维，并率先开始变革，向客户交付最佳的成果。

North America (19) Calgary, Chicago, Denver, Edmonton, Fort Worth, Houston, Los Angeles, Miami, Mountain View, Nashville, New York, Ottawa, Phoenix, San Francisco, Seattle, Tampa, Toronto, Vancouver, Washington DC

北美 (19) 卡尔加里，芝加哥，丹佛，埃德蒙顿，沃斯堡，休斯敦，洛杉矶，明尼阿波利斯，山景城，纳什维尔，纽约，渥太华，凤凰城，旧金山，西雅图，坦帕，多伦多，温哥华，华盛顿特区

Latin America (7) Bogota, Buenos Aires, Lima, Mexico City, Rio de Janeiro, Santiago, São Paulo

拉丁美洲 (7) 波哥大、布宜诺斯艾利斯、利马、墨西哥城、里约热内卢、圣地亚哥、圣保罗

UK and Ireland (18) Aberdeen, Bath, Belfast, Dublin, Birmingham, Bristol, Cambridge, Cardiff, Edinburgh, Glasgow, Leeds, London, Manchester, Newcastle, Nottingham, Reading, Sheffield, Teesside

英国 (18) 阿伯丁、巴斯、贝尔法斯特、伯明翰、布里斯托尔、剑桥、卡迪夫、都柏林、爱丁堡、格拉斯哥、利兹、伦敦、曼彻斯特、纽卡斯尔、诺丁汉、雷丁、谢菲尔德、提塞德

Europe (20) Amsterdam, Atyrau, Basel, Berlin, Frankfurt, Hamburg, Istanbul, Krakow, Madrid, Milan, Moscow, Munich, Paris, Rome, St Petersburg, Stavanger, Stockholm, Vienna, Warsaw, Zurich

欧洲 (20) 阿特劳、阿姆斯特丹、巴塞尔、柏林、汉堡、法兰克福、伊斯坦布尔、克拉科夫、马德里、米兰、慕尼黑、莫斯科、巴黎、罗马、圣彼得堡、斯塔万格、斯德哥尔摩、维也纳、华沙、苏黎世

Africa (9) Cape Town, Dar es Salaam, Durban, Gaborone, Harare, Johannesburg, Kampala, Nairobi, Maputo

非洲 (9) 开普敦、达累斯萨拉姆、德班、哈博罗内、哈拉雷、约翰内斯堡、坎帕拉、马普托、内罗毕

Middle East (6) Abu Dhabi, Doha, Dubai, Muscat, Dammam, Riyadh

中东 (6) 阿布扎比，达曼，多哈，迪拜，马斯喀特，利雅得

Asia (16) Bangalore, Beijing, Ho Chi Minh City, Hong Kong, Jakarta, Kuala Lumpur, Macau, Manila, Mumbai, New Delhi, Seoul, Shanghai, Shenzhen, Singapore, Tianjin, Tokyo

亚洲 (16) 班加罗尔、北京、胡志明市、香港、雅加达、吉隆坡、澳门、马尼拉、孟买、新德里、首尔、上海、深圳、新加坡、天津、东京

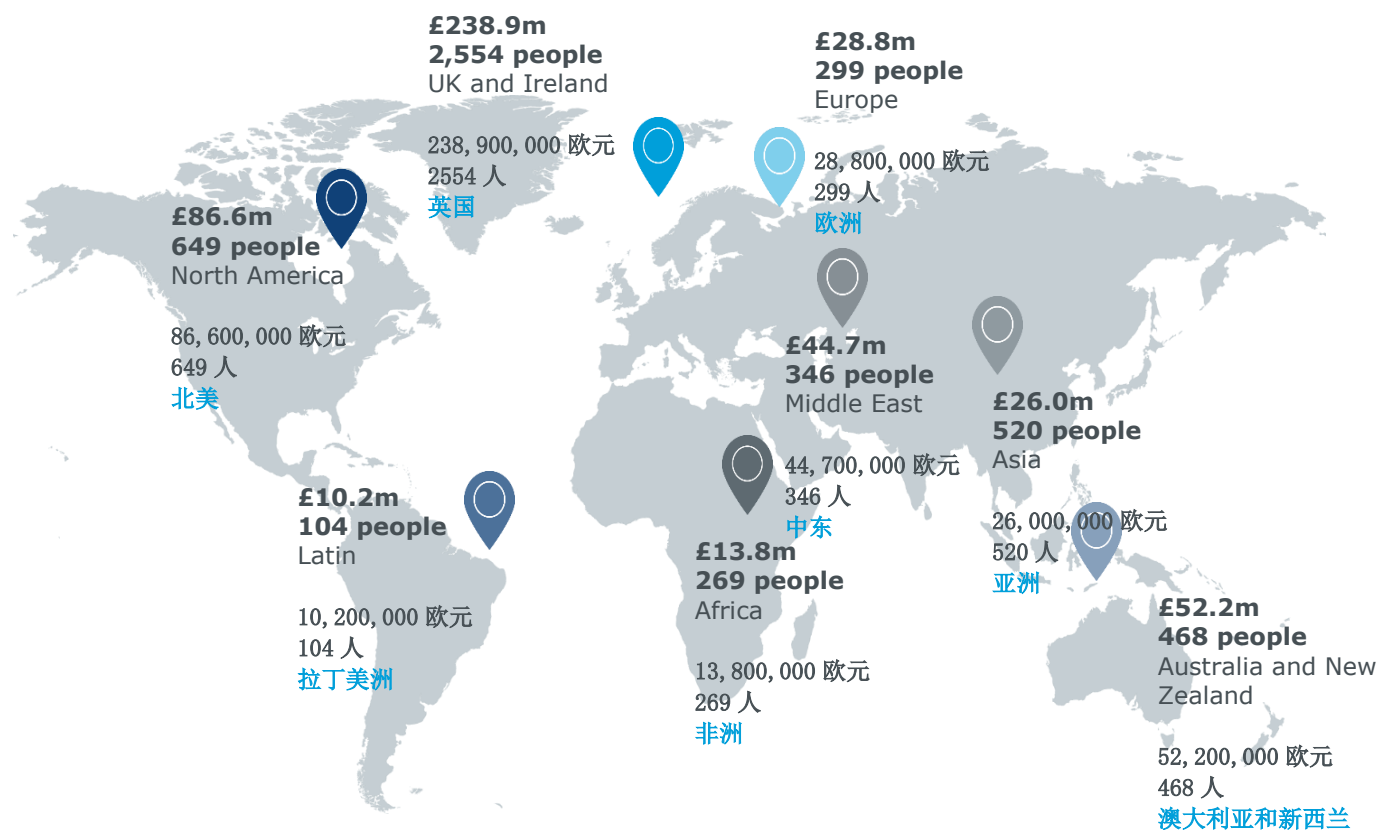
Where we work 我们的足迹

Australia and New Zealand (13) Adelaide, Auckland, Brisbane, Cairns, Canberra, Christchurch, Darwin, Gold Coast, Melbourne, Perth, Nadi, Sydney, Townsville

澳大利亚和新西兰(13) 阿德莱德、奥克兰、布里斯班、凯恩斯、堪培拉、基督城、达尔文、黄金海岸、墨尔本、珀斯、纳迪、悉尼、汤斯维尔

Total (108)

总计 108 个城市



Where we work 我们的足迹

Our China footprint

中国区足迹

Turner & Townsend has been active in China since 1996 and have offices in Shanghai, Beijing, Shenzhen, Macau, Tianjin and Hong Kong. We have delivered more than 1000 projects in over 81 locations across China, including Haikou, Hong Kong, Urumqi, and Harbin.

特纳唐逊自 1996 年进军中国市场以来，一直在积极发展业务，并且已经在上海、北京、深圳、澳门、天津和香港设立办事处。我们已经在海口、香港、乌鲁木齐和哈尔滨等 81 个中国城市完成了 1000 多个项目。

We help clients to deliver inward investment projects as varied as hi-rise commercial and/or mixed use developments, automotive and food retail roll-out programmes, semiconductor plants, manufacturing facilities, warehouses, head office buildings, rare earth metals foundries, research and development campuses, and consulate and embassy buildings. We also work on large scale development projects in China and overseas with Chinese multinationals.

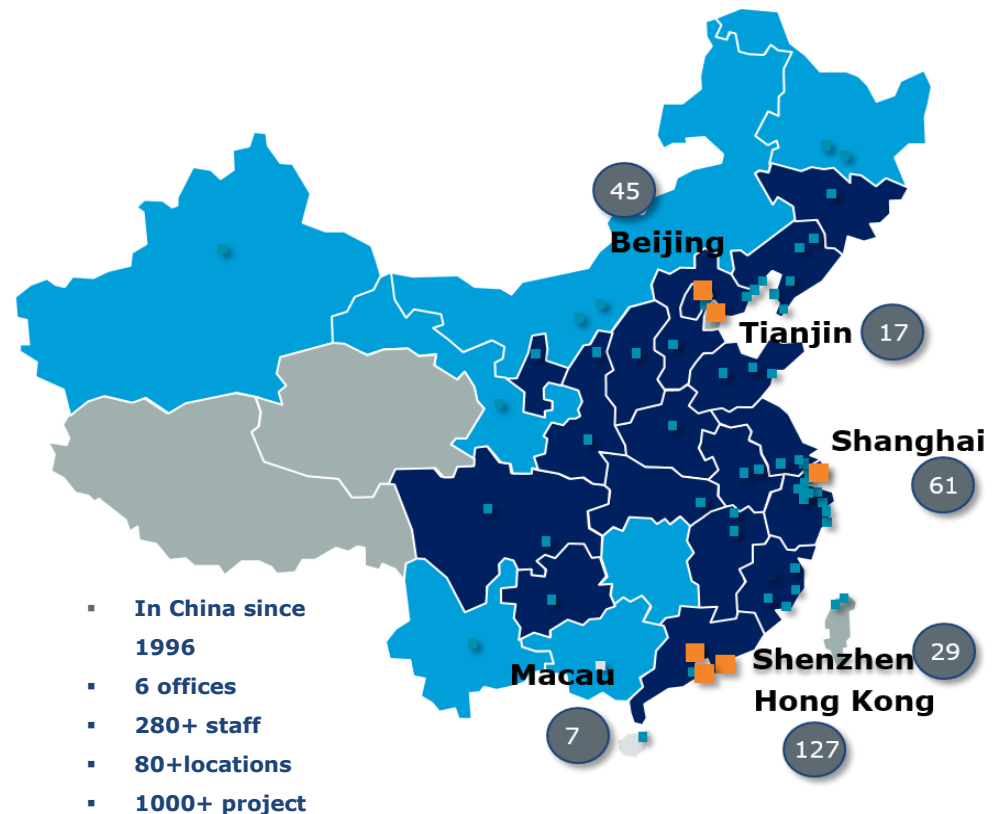
我们帮助客户完成各种对内投资项目，如商业及综合大楼开发、汽车及食品零售推广项目、半导体工厂、生产设施、仓库、总部大楼、稀土金属铸造厂、研发园区、领事馆和大使馆建筑。我们还与中国的跨国公司合作完成中国和海外的大型开发项目。

The breadth and depth of this experience has given us a comprehensive understanding of the complexities of investment and development in China, and an equally invaluable database of supply chain, cost benchmark data and other construction industry information across China.

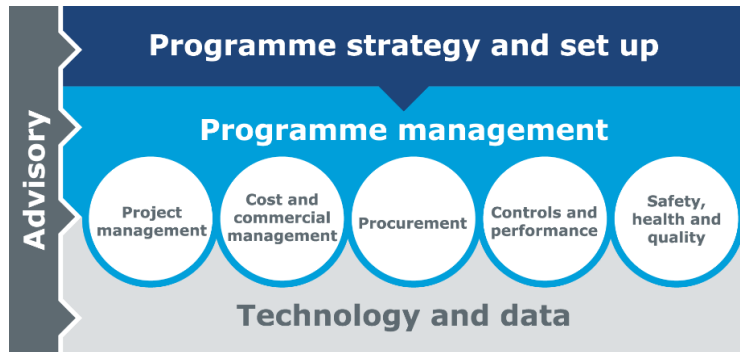
广泛和深入的经验使得我们更加全面地了解在中国进行投资和开发的复杂性，同时我们还建立了有关供应链、成本基准数据和中国其他建筑行业信息的宝贵的数据库。

We are one global business providing a consistent quality of service to deliver great outcomes for your projects, wherever they are.

我们是一家全球化的公司，可为全球各地的客户提供始终如一的服务，交付优质的项目成果。



What we do 我们的业务领域



Our services cover the full spectrum of programme management requirements, from advisory to project delivery to post-project operational readiness, and support the full range of stakeholders in complex programmes.

我们的服务囊括了项目管理各方各面的要求，从咨询、项目交付到后期运营准备，并且可以为综合项目中的所有利益相关方提供支持。

We take ownership of the performance agenda throughout, always looking for better ways to improve our client's financial and contractual position.

我们全程掌握项目履行进度，坚持不懈地寻找更好的方法，改善客户的财务及合同状况。

Our depth of experience enables us to fully understand the challenges, plan for the desired outcomes, access the right capability, manage ambiguity, and continually apply data and insights to inform decision-making.

丰富的经验将有助于我们充分理解问题，规划预期成果，获得相匹配的能力、管理分歧，并且持续运用数据和理论来指导决策过程。

Programme strategy and set up

项目战略和启动

Setting up for success – building the right capabilities and execution plan to drive clear programme outcomes.

成功启动——建立正确的能力和执行计划，形成明确的项目成果。

Programme management

项目管理

Looking at the big picture, driving better overall outcomes, and having real confidence your programme is under control.

从大局出发，推动更好的整体成果，对项目的掌控有十足的把握。

Project management

专案管理

Delivering project success through effective planning, the right team and rigorous controls.

通过有效的规划、合适的团队和严格的控制实现项目的成功。

What we do 我们的业务领域

Cost and commercial management

成本和商业管理

Driving and safeguarding your commercial interests from start to finish.

自始至终确保并提升您的商业利益。

Procurement

采购

Developing and delivering procurement and supply chain strategies that get the best results from the market.

开发和交付可从市场中获得最佳成果的采购及供应链战略。

Controls and performance

控制和绩效

Applying robust and pro-active controls from a clear baseline to deliver confidence in programme and project performance.

基于明确的基线标准，应用稳健和前瞻性的控制，树立客户对方案和项目履行的信心。

Safety, health and quality

安全、健康和质量

Embedding the strategies and culture that support effective operations and maintain a safe and healthy environment.

采纳能够支撑有效运作并维持安全健康的环境的战略和文化。

Technology and data

技术和数据

Unlocking the potential of technology, data and information modelling to drive performance, support great decision-making and create collaborative working environments.

挖掘技术、数据和信息模式的潜能，推动项目履行，支持重大决策制定，并创造协同工作环境。

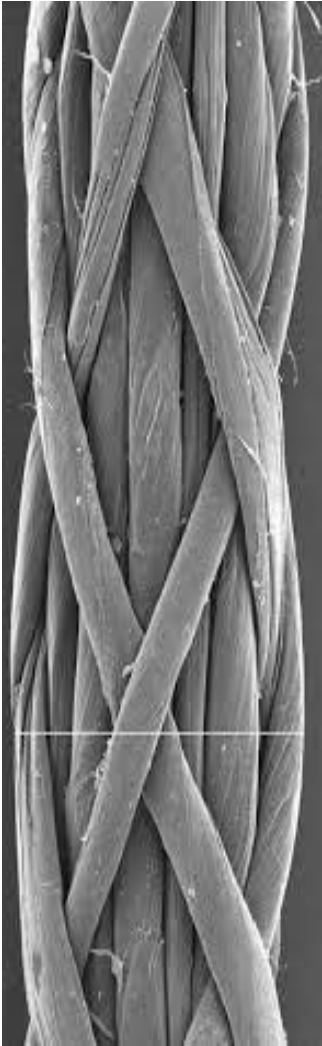
Advisory

咨询服务

Independent advice to help make your business and investments a success.

独立的咨询服务帮助您企业和投资取得成功。

HTM Statement 高科技制造业陈述



A convergence of trends and technologies is revolutionising the high-tech and manufacturing industries.

技术与趋势的一致性正在导致高科技和制造业的变革。

This perfect storm of globalisation, changing client expectations, digitalisation, regulation reform and disruptive business models is having a pervasive impact across the high-tech and manufacturing sectors pushing companies to upgrade, redesign and build new facilities to succeed in a highly competitive and changing environment.

全球化、客户预期变化、数字化、监管改革和颠覆性的商业模式都是巨大的变化，在高科技和制造业领域产生了很大影响，迫使企业升级、重新设计和建设新的设施，在高度竞争和变化的环境中取得成功。

Whether it's redesigning a laboratory to advance biomedical research, building a new manufacturing plant close to emerging markets or delivering a 30MW datacentre, the construction of these mission critical facilities are characterised by similar challenges:

无论是重新设计一座实验室来改进生物医药研究，在新兴市场附近建设一座新的制造工厂，还是建设 30MW 的数据中心，都是要靠建设。

设施建设所面临的一些共同的难题：

- **First-to-market:** Speed of deployment is fundamental in meeting market demands and disrupting the competition. Once the business has committed to a go live date it must deliver, which means 'schedule is king'. Intelligent procurement models, identifying the 'right' supply chain, smart interfacing, pre-fabrication, and modularisation can help to achieve aggressive time lines.

第一时间接触市场：部署速度是满足市场需求、打破竞争的基础。一旦企业承诺了交付的期限，就表示进度日程为上。智能采购模型、确认合适的供应链、智能接口、预制造和模块化有助于保持进度。

- **Schedule certainty:** Establishing robust timelines for implementation is a primary focus and involves a wide understanding of the risks and uncertainties that can affect delivery. Lean management methods can be used to design a streamlined structure and decision-making process, in which the level of checks and balances for each decision type is tiered according to the level of risk and impact on timeline.

进度确定性：建立健全的执行时间表是首要重点，这包括要对能影响交付的风险和不确定性有广泛的理解。精益管理方法可以用来设计一个简易结构和决策过程，根据风险级别和对时间表的影响，对每个决策类型的检查和衡量分层分级。

- **Value for money:** While the drive is there to be first to market, it comes with ongoing cautiousness about economic stability. Control must be achieved from the outset by setting robust budgets and managing spend to maximize the return on investment.

资金价值：尽管需要把市场放在第一位，然而对于稳健的经济还是要保持谨慎。一开始就需要通过建立健全的预算实现管控，还要管理花费让投资回报最大化。

- **Evolving business models:** New entrants into the market are impacting client expectations and disrupting traditional business models. 'Biggest is best' approach and economies of scale are no longer a key competitive advantage. Innovation, customisation and proximity to market are giving companies the winning edge. New processes are being optimised for mass customisation, high-quality throughput and speed. Understanding these trends and changing

business models is essential to deliver the right outcomes for a project.

演变中的商业模式：新的市场进入者正在影响客户的预期，正在打破传统的商业模式。“最大即最好”的看法和规模经济不再是关键的竞争优势。创新、定制和亲近市场正在让企业赢得优势。大规模定制、高质量的生产力和速度正通过新的方式进行优化。了解这些趋势，改变业务模式，对于正确地交付项目结果非常重要。

- **Location, location, location:** Site selection of high-tech and manufacturing facilities is important and determined by many variables such as proximity to market, infrastructure, utilities, fibre connectivity and cost. Location has wide ranging impacts on delivering capital programmes from attracting qualified staff to remote locations to sourcing a supply chain in an intensively competitive metropolitan market. Local market insight coupled with an understanding of global trends is key to making any location work.

位置、位置还是位置：高新技术和制造设施的选址非常重要，并由众多变量决定，比如接近市场、基础设施、公共事业、光纤联通以及成本。位置对于资本方案的实施影响广泛，从吸引合格员工到偏远地区，到在高度竞争的都会市场采购供应链。本地化方案加上全球趋势的理解是选址工作的关键。

Why Turner & Townsend 为什么选择特纳唐逊

Our extensive experience of working in the industrial and manufacturing sector and impressive track record of successful project delivery means we are perfectly placed to support your business needs moving forwards.

我们在工业和制造业工作的丰富经验，以及在成功的交付项目方面的良好口碑，意味着我们完全有能力支持您的业务需求向前发展。

Our integrated service model, as referred to earlier, can provide you with the necessary skills to drive performance improvement throughout the project lifecycle.

如前所述，我们的一体化服务模型可以为您提供在整个项目生命周期中推动性能改进的必要技能。

The following sections identify just a few of the key areas where Turner & Townsend can add significant value to your project needs:

以下是特纳唐逊可以为您的项目需求增加重要价值的几个关键领域

Delivering Value for Money 实现资金价值

Establishing the business case and business plan for a major manufacturing facility involving significant capital expenditure is often a challenging exercise. This challenge is only exaggerated when the Client is unfamiliar with the laws / legislations in the country where the facility is to be built.

建立业务案例和业务计划并涉及到大量资本支出的主要制造设施通常是一项具有挑战性的工作。当客户不熟悉需要建设设施的国家的法律/立法时，挑战会被夸大。

Turner & Townsend have the in-house capability and local knowledge to support you through this period. Activities we can assist you with include:

特纳唐逊的内部能力和本地化知识能够帮助您面对挑战。我们可以为您提供协助的活动包括：

- Feasibility studies & option appraisals - Providing assistance with decisions relating to location (region, country, state, city, business park), tax /incentives, engineering services and civil infrastructure etc.

可行性研究和选择方案评估-协助作出与选址（地区、国家、州、城市、商业园区）、税收/奖励、工程服务和民用基础设施等有关的决策。

- Local Authorities – Providing guidance in relation to national codes and regulations that can have an influence on capital expenditure decisions.

地方当局——提供有关可能影响资本支出决策的国家法规的指导。

- Budget Setting – High level cost planning including cost-benefit analysis, lifecycle costing for energy use, maintenance of equipment and replacement.

预算编制——高级成本规划，包括成本效益分析、能源使用的生命周期成本、设备维护和更换。

- Programme Planning – Development of the strategic programme from project inception to project completion including all major project milestones / gateways.

项目规划——从项目开始到项目完成的战略计划的发展，包括所有主要的项目节点/关口。

- Critical Success Factors & Key Performance Indicators – Working with the Client to identify those criteria upon which the projects success will be assessed and subsequently measured.

关键成功因素和关键绩效指标——与客户合作以确定标准，项目的成功将根据这些标准进行评估和后期测量。

- Risk and Opportunity Management – Identification of risks and opportunities including the proposals for mitigating risk and maximising opportunities derived from the business case.

风险与机会管理——识别风险和机会，包括从商业案例中减少风险和最大化机会的建议。

Project Initiation

项目启动

Following approval of the business case it is important that robust protocols are put in place to create a strong framework from within with the project can be managed.

商业项目批准之后，重点是建立健全的协议，以便创建强大的项目内部框架，从而能够对其进行管理。

Turner & Townsend are experienced in developing Project Execution Plans that will deliver this need whilst also developing Project Governance Procedures that allow for clear, auditable and “lean” decision making, targeted at the correct “level” in the organisation, so as to prevent unnecessary delays to the programme.

特纳唐逊在制定项目执行计划方面经验丰富，在提供这种需求的同时制定项目管理流程，对组织的层级进行明确、可审计和“精简”的决策，从而防止对方案不必要的的延误。

Project Controls

项目控制

Quality

质量

We will manage the process from Master Plan to Operations and drive the quality agenda right through the duration of the project. We will verify that the design fully meets the stakeholder requirements and then

validate, through a comprehensive inspection and testing regime, that the construction fully meets the design.

我们将管理从主计划到运营的过程，并全程监控质量。我们将验证设计完全满足利益相关者的要求，然后通过全面的检查和测试制度，验证建筑完全满足设计。

We will develop a Quality Plan for the duration of the project. This will set out all the review, sign-off and assurance processes that will give you confidence that quality is “built in” across the entire project life-cycle. Again, the BIM environment will be instrumental in supporting the drive for quality.

我们将在项目期间制定一个质量计划。列出所有评审、签约和担保过程，这些过程保证您在整个项目生命周期中的质量。同样，BIM 环境将有助于支持质量提升。

Schedule

时间表

Starting operations on time is a fundamental success criteria for any hi tech and manufacturing facility. With significant sections of the critical path contingent on approval processes, we will take all necessary steps to fully document all internal, external and regulatory approvals and build them into our master schedule, which we will closely monitor and track all steps and expedite the process.

及时的启动运作是任何高科技和制造设施的基本成功标准。由于重要的关键路径取决于审批过程，我们将采取一切必要步骤来全面记录所有内部、外部和监管审批，并将它们构建到我们的总日程表中，我们将密切监测和跟进所有步骤并加速进程。

We will use the designers and the BIM model to develop a fully visualised construction sequence. This will allow us to challenge traditional construction durations and seek efficiencies in the construction schedule. This will significantly de-risk the schedule.

我们会纳入设计师和 BIM 模型，开发一个完全可视化的建设程序。这使得我们能够挑战传统的施工周期，并在施工进度中寻求效率。这将大大降低进度风险。

The critical path then moves to the construction period. We will evaluate if there is any benefit in procuring and delivering advance enabling works, if this is necessary to de-risk the overall schedule. Then we will turn our attention to the contractor construction programme. We will operate a comprehensive schedule assurance process, combined with a “single source of truth”: approach to performance reporting that will give us full visibility of performance and productivity.

这样一来，施工阶段就成为了关键。我们将评估在采购和交付中预先启用工程是否有任何好处，是否需要降低整体进度风险。之后我们将把注意力转向承包商的施工方案。我们将结合“唯一的真相来源”（绩效报告的方法，能使我们充分了解绩效和生产力）运行一个全面的时间表保证流程。

Design & Procurement Management

设计与采购管理

A design that meets the Clients current business needs but which also introduces flexibility and “futureproof” for the lifecycle of the facility requires the right team to deliver it.

设计要满足客户当前业务需求，同时又要为设施的生命周期引入灵活性和“面向未来”的设计，这需要合适的团队来交付。

Turner & Townsend have extensive experience of the predominant consultants in the industrial and manufacturing industry and are able to lead the procurement of the team to provide the “best fit” for the Client.

特纳唐逊在工业和制造业领域拥有丰富的顾问经验，能够领导采购团队为客户提供“最适合”的产品。

In addition which we also take a lead role in stakeholder mapping, brief development, design and specification management to achieve the effective delivery of a thorough, detailed and coordinated design.

此外，我们还在利益相关方分析、简明开发、设计和规范管理方面起到主导作用，以便有效地交付全面、详细和协调的设计。

We will drive the use of BIM to achieve the necessary level of quality. This will include a monitoring and assurance process that validates the quality of the design within the BIM model. This will assure design co-ordination, all interfaces are properly addressed and all clashes are detected and resolved. We will also look for common design elements to assure standardisation that will lead to procurement and construction cost benefits.

我们将推动使用 BIM，以达到必要的质量水平。包括在 BIM 模型内验证设计质量的监控和保证过程。这将确保设计协调，正确地处理所有接口，检测 and 解决所有问题。我们还将寻找通用的设计要素以确保标准化，给采购和建设带来成本效益。

Following this we would look to lead the main contractor procurement, again utilising our industry experience to achieve a match that is best able to deliver the Client’s Critical Success Factors.

在此之后，我们将引导主要承包商的采购，再次利用我们的行业经验达成客户的关键成功因素。

For western Clients it should be noted that there are often fundamental differences in Asia in the approach to design, planning, approval processes, tendering, construction and testing & commissioning. Turner & Townsend understand these differences and are effectively positioned to advise the Client on this risks and opportunities that exist as a result.

对于西方客户来说，应该注意其在设计、规划、审批过程、招标、施工、测试及调试等方面与亚洲往往存在根本差异。特纳唐逊了解这些差异，并可以就因此而产生的风险和机会为客户提供有效的建议。

Construction Monitoring

施工监控

Once the works on site commence it is important to quickly establish the quality standards that Turner & Townsend and the Client expect to be delivered. This is especially important in Asia where the quality of delivery can vary significantly from country to country. Turner & Townsend employ Project Manager's & QA / QC Manager's with significant construction experience who are able to set and then work with the Design Team and Contractor to maintain the required standards throughout the duration of the works. We will be relentless in performance managing the contractors, with a particular focus on delivering quality and on maintaining schedule.

现场工程一经开始，迅速建立预期的质量标准就显得非常重要。这在亚洲尤其重要，国家之间的交付质量差异很大。特纳唐逊公司聘请具有丰富施工经验的项目经理和 QA/QC 经理，他们能够设立标准，并且随后与设计团队和承包商合作，在整个工程期间维持标准要求。在履行过程中，我们将尽力管理好承包商，注重交付质量和维护进度。

Contract Management

合同管理

Turner & Townsend's delivery teams are all extremely familiar with the standard construction contract forms used throughout Asia. As such they are perfectly placed to administer, "fair and reasonably" the construction contract, including variations and payments, on the Clients behalf.

特纳唐逊的工作团队非常熟悉亚洲使用的标准施工合同模板。因此，他们完全有能力站在客户立场“公平和合理地”监管建筑合同，包括变更和付款。

Operational Readiness

运作准备

The definition of success is full beneficial use of the facilities in time for operation and production. Turner & Townsend's staff have the necessary

skills to support the Client in "bridging the gap" to "Business as Usual" Operation.

成功的定义是充分利用设施及时进行运作和生产。特纳唐逊的员工具备必要的技能来支持客户“跨越鸿沟”，实现“常规业务”的运作。

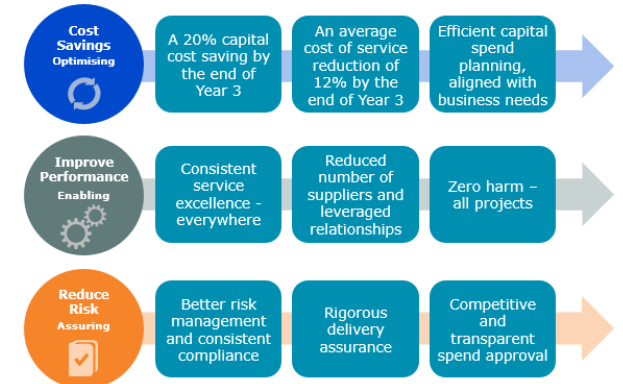
The operational readiness and transition period is key to this – and we will plan this from an early stage, engaging all key stakeholders in the activities and processes that need to be followed to take the facility from practical completion to fully operational.

操作准备和过渡期对此至关重要，我们将从早期阶段开始就对此进行规划，从实际执行到全面运作让所有主要利益相关方参与到活动和进程，跟进并采取措施。

We understand that the period of handover and relocation can be a stressful time and can be improved by good communications and stakeholder engagement.

我们理解交接期间和重新定位会是一个压力巨大的时期，可以通过良好的沟通和利益相关方的参与来改善这一问题。

In conjunction with the Operations and Facilities Management Teams, we will implement a comprehensive communication and coordination approach for moving in. We will commit to the information and timeframes communicated to minimise disruption and confusion. Typically this includes coordinating the installation of production equipment, furniture, fixtures, fittings and equipment, Audio Visual and IT in addition to the staff migrations in order to achieve a seamless transition.



我们将与营运和设施管理团队一起实施全面的沟通和协调方法。我们将尽力就信息和时间框架进行沟通，最大限度地减少误解和问题。通常情况下，这包括了生产设备、办公用具、固定装置、配件设备、视听和 IT 的安装协调，以及员工搬迁，以实现无缝过渡。

Portfolio Assurance

投资担保

There is a radical shift in the way global organisations deliver and manage their property assets. Senior management wants to create maximum value for their capital investment, with property contributing as a more productive component. Real estate teams are therefore seeking better control over where and how capital is spent, and evaluating how that spend is supporting business goals.

全球组织交付和管理其财产资产的方式发生了根本性的转变。高级管理层希望为资本投资创造最大价值，把不动产作为回报更大的部分。因此，不动产团队正在寻求更好地控制资金的使用方向和方式，并评估这些支出是如何为商业目标提供支持。

In responding to the challenge set by senior management and shareholders, Property, Facilities and Programme Managers are increasingly looking to implement a more intelligent approach to project and programme management. This approach helps to reduce risks and drive better project outcomes so that returns on capital investment are maximized.

为应对高级管理层和股东提出的挑战，物业、设施和方案经理正在寻求更智能的方法实施项目和方案管理。这种方法有助于降低风险，并推动更好的项目成果，使资本投资回报最大

Our intelligent Project Management model provides a fully integrated approach, bringing together standard tools and processes, enhanced controls, greater visibility of performance data and making sure people have the right capabilities to support delivery.

我们的智能项目管理模型提供了完全一体化的方法，将标准工具和流程结合在一起，增强了控制，提高了性能数据的可见性，并确保员工具有合适的技能支持交付。

With increasing pressures on real estate teams to deliver projects more effectively while driving down costs, there is a real opportunity to learn from these global organisations. The same intelligent programme and project management approach can be applied on smaller investment programs and projects, combining the central commercial controls and assurance activities of a traditional program office with efficient project execution, to provide similar benefits of consistency of approach, greater predictability, reduced risks and cost savings.

不动产团队在降低成本并有效交付项目的压力越来越大，因此需要向这些全球性组织学习经验。同样的智能计划和项目管理方法可以应用于较小的投资计划和项目，传统计划办公的中央商业控制和担保业务结合有效的项目执行，带来一致性的好处和更大的可预测性，降低风险并节约成本。

Obviously the model must be tailored so that it meets the specific needs of the client. However, experience shows that the key ingredients for effective and efficient delivery remain the same, and the benefits can be achieved on regional or in-state investment programs in the same way that they can at a multi-national level.

显然，模型必须量身打造，以满足客户的特定需求。然而经验表明，有效和高效交付的关键因素是不变的，区域或国内投资方案与国际投资一样可以获得效益。

Our understanding

我们的理解

The industrial and manufacturing sector is one of the most varied, featuring a diverse range of sub-sectors ranging from distribution and storage, through to food and beverages and all manner of consumer products in between. There is a high priority on growth where companies are launching new products and services, entering new markets and sectors. This is being achieved through mergers, acquisitions or organic growth.

工业和制造业是最多样化的部门之一，其多样化的分部门包括从分配和储存到食品和饮料以及介于两者之间的各种消费品。公司在推出新产品和新服务，进入新的市场和部门时，会优先考虑增长问题。这是通过兼并、收购或有机增长来实现的。

The uncertainty in global growth will intensify competition for market share, new players will also expanding aggressively. Gaining competitive advantage through improved access to market or reduced operating costs is the key. As the costs of energy increase, it is likely that this will become the highest cost of the manufacturing process in the future.

全球增长的不确定性将加剧市场份额的竞争，新的竞争者也将积极扩张。通过提高市场准入或降低运营成本来获得竞争优势是关键。随着能源成本的增加，很可能这将成为未来制造流程中的最高成本。

Businesses in the sector are pursuing high skills knowledge and modest operating costs. Global expansion is being replaced by smaller, targeted production facilities where both delivery and proximity to market are key drivers. Some of our clients are also looking to consolidate, make their existing space more productive and setting up in new geographic locations that offer more competitive real estate and infrastructure.

该行业中的企业追求高技能的知识和适度的运营成本。全球扩张正被规模更小、目标更明确的生产设施所取代，而生产设施的交付与接近市场是主要的驱动力。我们的一些客

户也正在寻求合并，使他们的现有空间更有生产力，并在新的地理位置建立更具竞争力的不动产和基础设施。

Research & Development, innovation and speed to market are recognised as the differentiators for the market in the future, improving quality, lowering costs and increasing margins. This is translating across all aspects of the property portfolio: production and non-production. The proliferation of new technologies such as 3D printing, robotics, artificial intelligence, materials science and technologies will also provide competitive advantage.

研究开发、创新和市场速度被公认为是未来市场的分水岭，提高质量，降低成本，增加利润。其贯穿资产组合的所有方面，包括生产和非生产方式。3D 印刷、机器人技术、人工智能、材料科学和技术等新技术的广泛应用也将提供竞争优势。

Organisations are developing plans for a workplace of the future which is flexible, efficient and inspiring. Delivering projects across this spectrum can be extremely challenging with works often required to take place within live environments where the protection of production, safety and security is paramount.

组织正在为未来的工作场所制定灵活、高效和鼓舞人心的计划。交付跨此范围的项目可能极具挑战性，因为经常需要在对生产、安全和安全的保护至关重要的生活环境中进行工作。

The industry is dominated by the product cycle and major programmes of work. The challenge for the profession is about being flexible and looking



at innovative ways of working and new models of delivery. Greater visibility of the end-to-end supply chain, consolidating where possible, will help understanding the risks better. We are working with our clients to explore how their estates can be used as an enabler to not only complement the new ways of working but also act as a financial catalyst to fund significant capital developments.

该行业重视产品周期和重要的工作计划。该行业面临的挑战是灵活多变，着眼于创新的工作方式和新的交付模式。端到端供应链更加可视化，并在可能的情况下巩固基础，将有助于更好地了解风险。我们正在和我们的客户一起探讨他们的房产如何能够被用作一种推动力，不但可以补充新的工作方式，而且可以充当金融手段来为重要的资本发展提供资金。

We understand the complexity of the demands you face and the objectives you are seeking to achieve. We have the people, the knowledge, the expertise and the experience to help achieve your desired outcomes by developing solutions that maximise the value of your investment.

我们理解您所面临的需求的复杂性和您所追求的目标。我们拥有的人员、知识、专长和经验，可以通过开发使您的投资价值最大化的解决方案，帮助您实现期望的结果。

We understand the specific requirements surrounding hi tech and manufacturing developments and appreciate the particular challenges and risks that face these projects such as:

我们理解围绕高科技和制造业发展的具体要求，并理解这些项目面临的特殊挑战和风险，例如：

- planning for initial start-up, operational workflow and equipment maintenance, i.e. designing the building from the inside out vs the conventional way of fitting operations into a building
对初始启动、操作工作流程和设备维护进行规划，即从内到外设计建筑物，而不是将操作装配到建筑物中的传统方法
- agility of operational efficiency, space adaptability and flexibility

操作高效率、空间适应性和灵活性

- engineering complexity, the systems and equipment can be very specific
工程复杂性，系统和设备可以非常具体
- reliability and maintenance of the Mechanical, Electrical and Plumbing infrastructure supporting operational equipment, avoiding down time
机械操作设备、电气和管道基础设施的可靠性和维护，避免停机时间
- space implications of redundancy
冗余空间的提醒
- energy costs associated with cooling and understanding lifecycle cost
冷却相关的能源成本和研究生命周期成本
- resilient power and water
弹性的能源和用水
- commissioning and getting it right first time
调试并确保一次性准备就绪

Key areas of expertise

关键专业领域

The expertise we can offer you extends into every area of project delivery and service improvement, adding value at every stage of your project or business lifecycle.

我们能够为您提供的专业知识涵盖项目交付和服务改进的每个领域，在项目或业务生命周期的每个阶段增加价值。

Estate utilization and management:

不动产利用与管理：

HTM Statement 高科技制造业陈述

In today's complex, highly individual, and continually changing environment, maximizing return on your investment demands that your property portfolio has the flexibility to meet changing organisational requirements. Flexibility is critical to adjust capacity to suit demand and allow adaptable product line outputs.

在当今复杂、高度个性化和不断变化的环境中，使投资回报最大化要求您的资产组合具有灵活性，以满足不断变化的组织要求。灵活性是调整容量以适应需求并允许可适应的产品线输出的关键。

Compiling a detailed portfolio of information will provide essential knowledge of your occupational restrictions and therefore enabling the formulation of any property solutions. Turner & Townsend can assist your business through the provision of Market Research, Asset Management, Property and Portfolio Management, Acquisition and Disposal strategies, Relocation Management, Property Management Strategy and Building Consultancy.

编写一份详细的信息组合将提供关于职业限制的基本知识，从而能够制定任何类型的财产解决方案。特纳唐逊可以通过提供市场调查，资产管理，物业和投资组合管理，收购和处置战略，搬迁管理，物业管理战略和建筑咨询来帮助您的业务。

Pre-construction services and due diligence:

施工前的服务和尽职调查：

A range of services covering the due diligence, design and management of construction and technology requirements for new builds, refurbishments and fit outs.

一系列服务，包括尽职调查，新建筑所要求的建造和技术的设计和管理，翻新和装修。

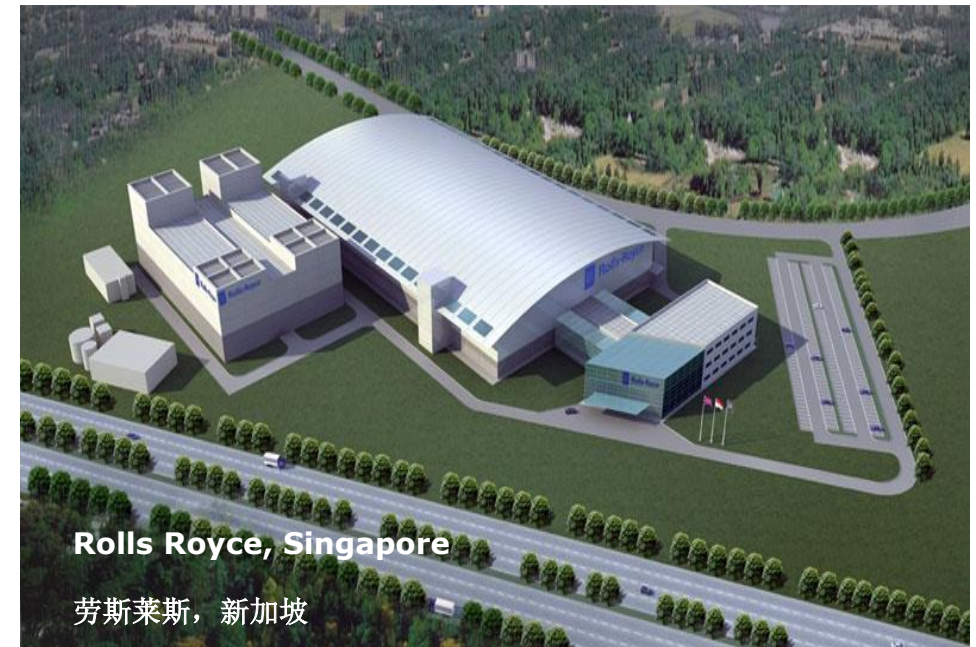
Cost control, procurement and market testing:

成本控制、采购和市场测试：

Comprehensive expertise including:

综合专业知识包括：

- cost management (estimating, benchmarking and project controls)
成本管理（评估、制定基准和项目控制）
- schedule development and management
进度计划开发与管理
- contracting and procurement
承包和采购



Project and programme management consultancy:

项目和方案管理咨询:

Complete project and program management support and delivery using best practice methodologies including schedule, risk and opportunity management, communications planning and stakeholder management.

使用最佳实践方法完成项目和计划管理支持和交付，包括进度、风险和机会管理、沟通规划和利益相关方管理。



Manufacturing capability

制造能力

With robots and automated factories, mass customization, rapid prototyping through 3D printing, ever shorter product cycles, the need to balance global demand swings, sensors embedded throughout the supply chain, new innovations are having a pervasive impact on manufacturing across all industries.

机器人和自动化工厂，大规模定制，3D 打印快速成型，越来越短的产品周期，平衡全球需求波动的需要，嵌入整个供应链的传感器，新的创新正在对所有行业的制造产生普遍的影响。

Manufacturing has the broadest range of sub-sectors, in the literal sense it is the mechanical production of goods. Our experience spans aerospace, automotive, defence, FMG's, life sciences and food and beverages. 制造业具有最广泛的子行业范围，从字面意义上讲，它是机械产品的生产。我们的经验涵盖航空航天、汽车、国防、FMG、生命科学和食品和饮料。

The industry is fiercely competitive, highly integrated in a global network of interwoven supply chains, with a high priority on growth with established companies launching new products and services, entering new markets and sectors. This is being achieved through mergers, acquisitions or organic growth. 该行业竞争激烈，高度集成在一个错综复杂的全球供应链网络中，优先与已建公司一起发展新产品和服务，进入新的市场和部门。这是通过兼并、收购或有机增长来实现的。

Any uncertainty in global growth only intensifies competition for market share, new players will also be expanding aggressively. Gaining competitive advantage through improved access to market or reduced operating costs is the key. As the costs of energy increase, it is likely that this will become the highest cost of the manufacturing process in the future.

HTM Statement 高科技制造业陈述

全球增长中的任何不确定性只会加剧市场份额的竞争，新的竞争者也将积极扩张通过提高市场准入或降低运营成本来获得竞争优势是关键。随着能源成本的增加，很可能这将成为未来制造流程中的最高成本。

Businesses in the sector are pursuing high skills knowledge and modest operating costs. Global expansion is being replaced by smaller, targeted production facilities where both delivery and proximity to market are key drivers. Some of our clients are also looking to consolidate, make their existing space more productive and setting up in new geographic locations that offer more competitive real estate and infrastructure.

该行业中的企业追求高技能的知识和适度的运营成本。全球扩张正被规模更小、目标更明确的生产设施所取代，而生产设施的交付与接近市场是主要的驱动力。我们的一些客户也正在寻求合并，使他们的现有空间更有生产力，并在新的地理位置建立更具竞争力的不动产和基础设施。

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我们之前曾与特纳唐逊合作，因此我们相信他们能够提供最新和最佳实践，并为我们在阿拉伯联合酋长国 2.5 亿英镑的新制造厂提供项目和成本管理。

Ahmed Kadous, 联合利华湾供应链总监

"We've worked with Turner & Townsend before so we're confident in their ability to deliver the latest and best practice whilst providing project and cost management services for our new £250m manufacturing factory in the United Arab Emirates"

Ahmed Kadous, Supply Chain Director at Unilever Gulf

Warehouse and logistics capability

仓储与物流能力

The retail industry is going through major change driven by the disruption of e-commerce. Retail and technology are merging, significant investment has been made in warehouse and logistics for organisations to gain (or remain) a competitive advantage.

零售业正在经历由电子商务推动的重大变革。零售业和技术正在融合，在仓库和物流方面进行了大量投资，以便公司获得（或保持）竞争优势。

The trends of Industry 4.0 are therefore as applicable to the warehouse and logistics landscape as they are production and manufacturing. 'Fulfilment centres' are automated and lean factory conditions and practises are becoming the norm.

工业 4.0 的趋势因此在生产和制造方面同样适用于仓库和物流领域。“成果中心”是自动化的，精益生产环境和操作正在成为常态。

Continued investments are being made moving us towards mobile robots in warehouses and the usage of drones for online fulfilment, the current supply chain is undergoing a major transformation. When the possibilities of artificial intelligence are added, the future supply chain holds the promise of being completely autonomous and self-orchestrated. A fleet of robotics driven by intelligent algorithms, eliminating waste. 持续的投资正在推动我们向仓库中的移动机器人以及使用无人机在线实现转移，当前的供应链正在经历重大转变。人工智能的可能性增加，未来的供应链具有完全自主和自组织化的前景。由智能算法驱动的机器人队伍，消除浪费。

The supply chain of tomorrow will be leaner, faster and most importantly, self-orchestrated. This unprecedented pace of change will be driven by a few radical technologies that will be cautiously adopted by industry participants over the next 15 years.

明天的供应链将更加简捷、更快，最重要的是，自我协调。这一史无前例的变化步伐将由一些激进的技术驱动，这些技术将在未来 15 年内被行业参与者谨慎采用。



HTM Statement 高科技制造业陈述

When planning and designing a new asset or adjusting your portfolio, how confident are you that it is fit for the future? Having a steady flow of consistent, rich and accurate data can help you deal with uncertainty.

当规划和设计一个新的资产或调整您的投资组合时，您有多少信心保证其适应未来发展？稳定、丰富、准确的数据的稳定流动可以帮助您处理不确定性。

Designing a structure that is highly adaptable is one way of hedging against the vast unknown. This option may suit some assets, but it may not be necessary for all scenarios.

设计一个高度适应性的结构是对冲这种未知性的一种方法。这种做法可能适合某些资产，但不是所有方案所必需的。

Start with data

始于数据

An alternative and potentially less costly approach is to focus on gathering relevant data and engaging with stakeholders as early as possible. The guiding principle is to track every element, every hidden corner of your asset. Detailed, consistent data leads to greater knowledge, the bedrock on which confident decisions can be made in later decades. Much of this knowledge can be embedded in one shared digital model, created and developed by the builders and designers of the asset, and then handed over to the client once the project is completed. At its simplest, building information modelling (BIM) creates a defined 3D digital design that exactly mirrors the physical asset. More sophisticated models also contain hosted and relational information on every object within the structure. They are an archive for everything from materials to appliance installation instructions and maintenance logs.

另一种成本可能更低的方法是集中精力收集相关数据并尽早与利益相关方接触。指导原则是跟踪资产的每一个元素，每一个不起眼的方面。详细、一致的数据会带来更大的知识，是在随后的几十年里做出自信的决定的基石。这些知识大部分可以嵌入到一个共享的数字模型中，由资产的构建者和设计者创建和开发，然后在项目完成后移交给客户端。最简单的方法是，构建信息模式（BIM）创建一个定义好的 3D 数字设计，准确地反映物

理资产。更复杂的模型还包含结构内的每个对象的托管和关系信息。它们是从材料到设备安装说明和维护日志的所有文件的归档。

The most obvious benefit of digital models is that they aid efficient operation through the life cycle of an asset: employees are able to locate hidden pipes and power networks, know whether ceiling fans are under warranty and even understand how to dismantle sections at the decommissioning stage. A well-populated model can also be a powerful tool for forecasting operational costs: making the difference predicting spending peaks and troughs in planned maintenance and replacement schedules. Knowing every element of your facility, and how it was constructed, could save months off remediation work or retrofitting in future years.

数字模型最明显的好处是，它能够帮助在资产的整个生命周期中高效运行：员工能够找到隐藏的管道和电网，知道吊扇是否处于保修期，甚至了解如何在退役阶段拆卸部件。密集区模型也可以是预测运营成本的有力工具，它在计划维护和维修计划中预测花费的高峰和低谷。了解您的设施的每一个要素，以及它是怎样建造的，可以在未来几年节省数月的补救或改装工作。

Right first time

一次性成功

When considering how to future-proof an asset, it is critical to ensure that all parties are comfortable with the design in the early stages. All too often, stakeholders don't get to see a facility early enough – the project can be too far advanced or even completed. As the MacLeamy curve demonstrates, the later changes are made to a project, the higher the subsequent cost in time and money.

在考虑如何对资产进行未来保护时，确保所有各方在早期阶段都熟悉设计是至关重要的。通常情况下，利益相关方无法在早期阶段看到设施——这个项目可能早已进入下个阶段甚至完成。正如麦克莱米曲线所示，越晚对项目作出变更，后续所需的时间和金钱就越多。

HTM Statement 高科技制造业陈述

The challenge is how to help stakeholders visualise the asset before it exists. Clients often construct physical models to test the design, finishes or layout of a facility. As well as substantially adding to costs, this can significantly extend the project timeline. We can rationalise this process now.

挑战在于如何帮助利益相关方在资产存在之前进行检查。客户经常会构造物理模型来测试设计、完成或布置设备。除了大幅增加成本外，还会严重延长项目时间。现在，我们可以将这一流程合理化。

Although physical mock-ups are unlikely to be replaced entirely, BIM provides interesting alternatives: a data-rich 3D model can be used within an immersive or augmented reality scenario. Stakeholders can experience virtual representations of interiors wearing glasses, or enter augmented-reality 'caves'.

虽然物理模型不太可能完全被替换，但是 BIM 提供了有趣的替代方案：数据丰富的 3D 模型可以在沉浸式或增强现实场景中使用。利益相关方可以佩戴眼镜体验内部虚拟展示，或进入增强现实的“洞穴”。

As well as facilitating feedback during early design stages, these tools are useful for staff training and helping occupants familiarise themselves with the new facilities before they open. BIM will play an increasingly important role for smooth handovers, sometimes referred to as 'soft landings'.

在早期设计阶段，这些工具不仅有助于反馈，而且对于员工培训和帮助居住者在新设施开放前熟悉它们也是有用的。BIM 将在平稳切换方面起到越来越重要的作用，有时被称为“软着陆”。

Future proofing

面向未来

Conceiving a building that can successfully adapt for future needs remains a significant challenge, but BIM can help to speed up decisions: certain elements of the digital design could be fixed within the digital model, leaving interchangeable sections that could be moved around and tested against

different scenarios. This could also be carried out when anticipating future expansion strategies or kept as a record to inform a future design team, acting as an executive or pre-emptive design exemplar. Going one step further, some forward-looking firms are now creating physical structures that can be almost as easily remodelled – or 'hacked' – as the virtual ones: the principle is to build modules that can be dismantled and moved about within the outer shell of the building. The building becomes a dynamic organism, creating an adaptive environment for an evolving community.

构思一个能够成功地适应未来需求的建筑仍然是一个重大挑战，但是 BIM 可以帮助加速决策：数字设计的某些元素可以固定在数字模型中，留下可互换的部分，可以移动并在不同场景进行测试。这也可以在预期未来的扩展策略时执行，或者作为记录保存，以便为之后的设计团队提供相关信息，充当执行或先进设计示例。此外，一些具有前瞻性的公司正在创建物理结构，它们几乎可以像虚拟结构一样，方便地进行重塑（或“拆除”）：其原理是构建在建筑物框架下能拆卸和移动的模块。建筑成为一个动态的有机体，为一个不断发展的社区创建一个适应环境。

When planning for the long term, what we can all be certain of is that the future is unpredictable. The problems that preoccupy us may now be irrelevant in a decade. New obstacles will emerge. Consistent, rich and accurate data is our greatest weapon for dealing with uncertainty. You may not be able to see everything that is on the horizon, but knowing and understanding your asset, and closely tracking how occupants are using it, is essential preparation for the unseen challenges and opportunities ahead.

进行长期规划时，我们可以肯定的是，未来是不可预测的。在过去十年里困扰我们的问题在现在可能是无关紧要的。新的障碍会不断出现。一致、丰富和准确的数据是我们处理不确定性的最大武器。您可能无法看到地平线上的一切，但了解和理解您的资产，并密切跟踪占用者如何使用它，是应对看不见的挑战和机遇的必要准备。

Realising the benefits of BIM

认识到 BIM 的好处

Objective decision-making: High tech and manufacturing clients can rely on rich, integrated data as building management systems are linked with other forms of data capture to create a more accurate, holistic picture.

客观决策: 因为建筑管理系统与其他形式的数据采集相联系，高科技和制造业客户可以依靠丰富的、集成的数据，以创建更准确、更全面的画面。

Testing virtual models: Stakeholders can experience a virtual 3D model of the new asset, using augmented-reality tools and immersive technology, such as 3D caves. Early feedback during design stage can avoid costly changes later in the construction process.

测试虚拟模型: 涉众可以使用增强现实工具和沉浸式技术（比如 3Dcave）体验新资产的虚拟 3D 模型。在设计阶段的早期反馈可以避免在施工过程中的昂贵变更。

Predictive maintenance: BIM can provide unified, reliable data, allowing staff to forecast lifespan and replacement programmes of materials even before commissioning. Social data and sensors can track the building, identifying areas receiving most use, and predict more accurate patterns in life cycle duration.

Our BIM capability

To maximise the potential of BIM we provide:

- Market leading, independent expertise in BIM;
- Contract advice to ensure the team's contracts are BIM aligned;
- A team who understand and are focused on the whole life cycle of an asset;
- An asset information model (AIM) set-up be utilised during the operation phase of a buildings life.

预测性维护: BIM 可以提供统一、可靠的数据，允许员工甚至在试运行之前预测材料的寿命和更换方案。社会数据和传感器可以跟踪建筑物，识别使用最多的区域，并预测生命周期中更精确的模式。

Real time or 'as needed' data: Clients can track the asset using an information model underpinned with BIM that is linked to sensors. Emphasis can shift to spotting and predicting trends to providing a proactive quantitative basis for informed decision-making.

实时或“根据需要”的数据: 客户可以使用与传感器链接的 BIM 支持的信息模型跟踪资产。重点可以转移到发现和预测趋势，为知情决策提供动态的量化基础。

Central source of information: All vital information, potentially down to the adhesives used in building materials, can be contained within a virtual digital building model that exactly mirrors the physical structure. The 3D model is a central source of information on which all future building decisions can be based.

中心信息源: 所有重要的信息，甚至包括建筑材料中使用的粘合剂，都可以包含在能精确地反映物理结构的虚拟数字建筑模型中。3D 模型是所有未来建筑决策采用信息的中心来源。

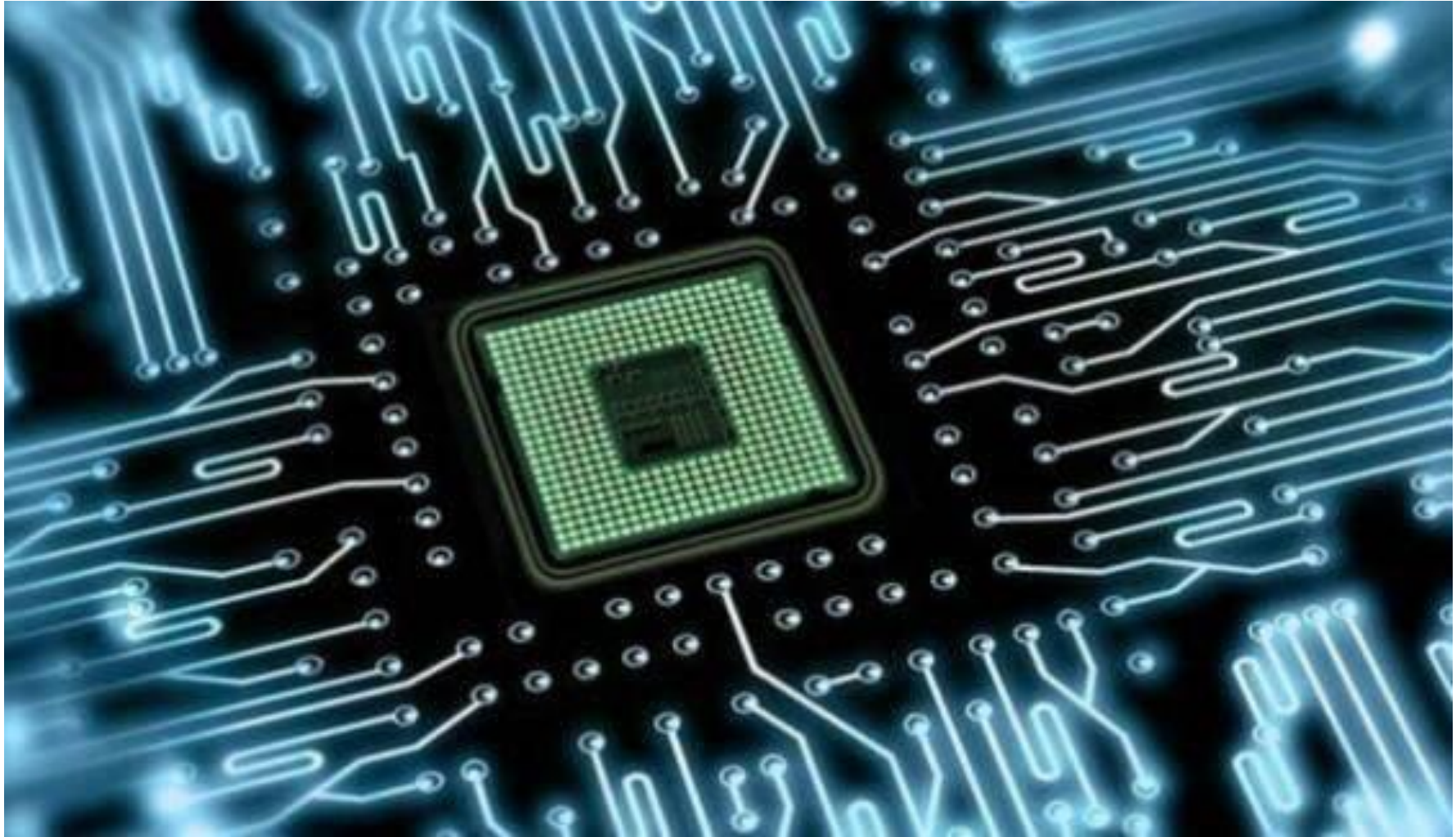
Flexible buildings: Buildings have modules that can be repeated or moved around in a matter of days which creates dynamic flexible spaces that can adapt to the evolving needs of the client.

灵活的建筑物: 建筑物具有可以在几天内重复或移动的模块，这些模块可以创建动态灵活的空间，以适应客户不断变化的需求。

Accessible data: Data can be held in a standardised format, future-proofed against changing technology

可访问数据: 数据可以以标准化格式保存，可以经受住未来的技术革新的考验

Semi Con Experience 半导体行业经验



Case studies

STATS ChipPAC Jiangyin (Phase I)



Client's requirements 客户需求

Turner & Townsend is appointed to undertake the task of design review, construction management and cost control of the Project. Location of project is in Jiangyin Jiangsu which construction area is approximately 14,000 square meters, including 7000m2 class 1000 clean room, 7000m2 utility centre and annex building.

特纳唐逊主要负责项目的设计审查，施工管理和成本控制服务。项目位于江苏江阴，建筑面积约 14000 平方米，其中 7000 平方米的 10 级洁净室和 7000 平方米公用事业中心和辅楼。

STATS ChipPAC is a leading provider of advanced semiconductor packaging and test services to global customers in the communication, consumer and computing markets. As a member of the JCET group of companies, STATS ChipPAC has the competitive advantage of increased manufacturing scale with a combined product portfolio ranging from discrete and low lead count devices to the most advanced flip chip, wafer level, SiP and 2.5D/3D packaging solutions.

星科金朋是一家集通信、消费和数据市场，为全球客户提供先进的半导体封装和测试服务的领先供应商。作为 JCET 集团公司的成员之一，星科金朋具有增加制造规模的竞争优势，其产品组合范围从分立和低引线数设备到最先进的倒装芯片，晶圆级，SiP 和 2.5D/3D 封装解决方案。

Client 客户

STATS ChipPAC (Jiangyin) Co., Ltd
星科金朋江阴有限公司

Value 价值

RMB 88 Million
8800 万元人民币

Programme 工期

2015-2016

STATS ChipPAC Jiangyin (Phase I)

Our Contribution 特纳唐逊的贡献

STATS ChipPAC appointed EDRI to work out detail design. Turner & Townsend has to carry out review EDRI's drawings and send out comments.

星科金朋指定 EDRI 准备设计方案。而特纳唐逊必须对 EDRI 的图纸进行审查并给出指导意见。

JECT, the head company of STATS ChipPAC, responsible for civil construction work (main structure, roof, facade and landscape on site). Turner & Townsend respond on MEP work and cleanroom construction management and cost control and validation.

JECT 是星科金朋的总公司，负责土木工程（主体结构，屋顶，立面和景观现场）。特纳唐逊负责机电工作和洁净室施工管理以及成本控制和确认。

For design review , Turner & Townsend's work scope is included:

针对设计审核，特纳唐逊的工作范围包括：

- According to new process layout, check EDRI's drawing can match equipment hook up requirement
根据新的平面图，检查 EDRI 的图纸是否可以匹配设备连接要求
- Check and insure clean room design is reliable
检查和确保洁净室设计是可行的

- According to process requirement, check and ensure the utility distribution can match process requirement,
根据流程要求，检查并确保公用事业分布符合流程要求
- According to STATS ChipPAC request, Turner & Townsend work out FMCS design,
根据星科金朋的要求，特纳唐逊准备 FMCS 的设计
- According to STATS ChipPAC request, Turner & Townsend work out energy saving plan;
根据星科金朋的要求，特纳唐逊准备节约能源计划
- High quality control of clean room to meet NEBB standards.
高质量的清洁室管理来满足相关标准

For the site construction management work scope is included:

针对现场施工管理，特纳唐逊的工作范围如下：

- Turner & Townsend will support STATS ChipPAC to get final approval by local government, like Fire-fighting, steam system, nitrogen system
特纳唐逊将支持星科金朋获得当地政府的最终批准，如消防，蒸汽系统，氮气系统
- Turner & Townsend will collect all process requests from STATS ChipPAC production engineers,
特纳唐逊将收集星科金朋生产工程师的所有流程请求
- Turner & Townsend support to issue the construction shop drawing redesign,
特纳唐逊支持重新设计施工车间图纸
- During construction phase, Turner & Townsend will control cost and keeping the time schedule.
在施工阶段，特纳唐逊负责控制成本并保持时间表
- Supervision contractor's work on site, make sure the good safety and good quality,
监督承包商现场工作，确保良好的安全性和良好的质量
- Manage M&E, decoration, hook up on site,

STATS ChipPAC Jiangyin (Phase I)

管理现场的机电、内装和吊装

- Lead commissioning and balancing the system

领导调试和平衡系统

- Prepare punch list and hand over qualified project to STATS ChipPAC

准备整改清单并最终移交给星科金朋

Making the difference 创造非凡的价值

- Good coordination ability is necessary in the project, especially the communication with client and LDI and local contractor;

项目中需要良好的协调能力，特别是与客户，LDI 和本地承包商的沟通；

- The good time schedule control to meet client serious requirement.

良好的进度控制能力来满足客户严苛的要求

Case study

Intel Fab Water



Client's requirements 客户需求

Intel is currently constructing their Fab68 Rea Sea Phase 2 in Dalian, northern China.

英特尔目前正在中国北方的大连建设 Fab68 Rea Sea Phase 2。

Provide collaborative estimating services participating as part of the collaborative design build project team. Be an active participant, engaging with the Design Builder to assist in determining market cost. Provide cost support & market analysis for all cost developed by the Design Builder (This is not a checker checking the work, this role consists of assisting in defining better data or cost market knowledge, as well as ensuring that all scope implications are captured in the total cost).

提供协作评估服务，作为协作设计构建项目团队的一部分参与。积极参与，与 Design Builder 合作，协助确定市场成本。为 Design Builder 开发的所有成本提供成本支持和市场分析（这不是检查工作的检查员，这个角色包括帮助定义更好的数据或成本市场知识，以及确保所有范围的影响都在 总成本）

Provide PH2 and HPM Warehouse Key SOR market intelligence to support Intel contract negotiation to ensure 70% of the cost weight will be with market cost reference to Intel. 3 bidders quote may be needed.

提供 PH2 和 HPM 仓库关键 SOR 市场情报，以支持英特尔合同谈判，确保 70% 的成本权重将与市场成本参考英特尔。可能需要 3 个投标人报价。

Our contribution 特纳唐逊的贡献

TT make a market survey including the fab clients' survey & contractors survey to finalize a complete report for Intel action, TT deliverables as follows:

特纳唐逊进行市场调查，包括晶圆厂客户的调查和承包商调查，以最终确定英特尔行动的完整报告，可开发性如下：

- Identify the key SOR items from the scope of work that is top cost driver of Phase 2/HPM scope (20%/80% rules – 80% cost weight), it needs to be aligned with Intel and provide proposal based on timeline of support.

确定工作范围中的关键 SOR 项目，这是第 2 阶段/ HPM 范围的最高成本驱动因素（20%/ 80% 规则 - 80% 成本权重），需要与英特尔保持一致并根据时间表提供建议支持。

Client 客户

Intel 英特尔

Value 价值

Confidential 保密

Programme 工期

Oct 2016 – Dec 2017
2016年10月到2017年12月

Appointment duration 预计工期

Sep 2016 – Oct 2016
2016年9月到2016年10月

Intel Fab Water

- Apply Ph1 Key SOR rates to Ph2 and validate the discrepancy; based on 2016 market price to refresh the key SOR if there are difference.

将 Ph1 关键 SOR 率应用于 Ph2 并验证差异;如果有差异, 基于 2016 年市场价格刷新关键 SOR。

- Material list including system, brand and supplier information which is nominated by Intel

材料清单, 包括由英特尔提名的系统, 品牌和供应商信息

- Lead the analysis of local conditions, consisting of labor and materials to determine market rates for key SOR items. This includes, but is not limited to, wage rates, labor availability, material costs, mark-ups, escalation, etc. A base template will be defined by Intel and used as a starting point. Based on template of Intel provide, provide cost for lines of material and labor

引导当地条件的分析, 包括劳动力和材料, 以确定关键 SOR 项目的市场价格。这包括但不限于工资率, 劳动力可用性, 材料成本, 加价, 升级等。基本模板将由英特尔定义并用作起点。基于英特尔提供的模板, 提供材料和人工线路的成本

- Provide support to Intel on final bid evaluation and GMP negotiation/contractor incentive Target Setup.

在最终评标和 GMP 谈判/承包商激励目标设置方面为英特尔提供支持。

Automotive Experience 汽车制造业经验



Case study

Building Extension Project of ZF-TRW Braking Extension



Client 客户

Faurecia

Value 价值

Confidential 保密

Programme 工期

Dec 2017 - Feb 2020
2017 年 12 月到 2020 年 2 月

Appointment duration 预计工期

Dec 2017 - Feb 2020
2017 年 12 月到 2020 年 2 月

Client's requirements 客户需求

Faurecia required ATO (Assistant To the Owner) for plant relocation in AnTing.

佛吉亚要求 ATO（业主助理）在安亭进行工厂搬迁。

The relocation project is to merge current AnTing and Waigang operations into one existing warehouse. The project includes one steel structure workshop, one office building, one power distribution room and one and one centre utility building. The plant area is 34405 m2, and the height is 11.2m

搬迁项目是将当前的安亭和外港业务合并为一个现有仓库。该项目包括一个钢结构车间，一个办公楼，一个配电室和一个和一个中心公用事业建筑。厂区面积 34405 平方米，高 11.2 米

Our contribution 特纳唐逊的贡献

Assistant to the owner

业主助理

Turner & Townsend was appointed to provide the ATO service including:

特纳唐逊被任命为提供 ATO 服务，包括：

- Prepare the client's needs and requirements 准备客户的需求和要求
- Coordinate and confirm that all statutory approvals 协调并确认所有法定批准
- Alert on any potential deviation and risk 警惕任何潜在的偏差和风险
- Advise on project time, quality, cost and safety 就项目时间，质量，成本 and 安全性提供建议
- Monitor the construction process 监控施工过程

Building Extension Project of ZF-TRW Braking Extension

Making the difference 创造非凡的价值

- Ensure the client's needs and requirements are complete and validated, ATO develop a clear understanding of the local context (regulations, constraints, etc) and the process utility

确保客户的需求和要求得到完整和验证，ATO 清楚地了解当地环境（法规，约束等）和流程效用

- Monitor construction process and raise the risks

监控施工过程并提高风险

- Evaluate major options and propose the appropriate execution strategy

评估主要选项并提出适当的执行策略

- Advise on methods of construction in terms of cost , time and quality

在成本，时间和质量方面提供建设方法的建议

Case study

Building Extension Project of ZF-TRW Braking Extension



Client 客户

APTIVE Co.,Ltd

Value 价值

Confidential 保密

Programme 工期

Mar 2018 - Dec 2018
2018 年三月到 2018 年 12 月

Appointment duration 预计工期

Jun 2018 - Dec 2018
2018 年六月到 2018 年 12 月

Client's requirements 客户需求

Aptiv is a global technology company that develops safer, greener and more connected solutions enabling the future of mobility.

Aptiv 是一家全球性技术公司，致力于开发更安全，更环保，更环保的解决方案，实现移动性的未来。

Aptiv project required Construction Management for new workshop locate in JiaXing city of ZheJiang province .

Aptiv 项目需要在浙江省嘉兴市新工厂进行施工管理。

The project includes research and development worksCope, dormitory,equipment room and gatehouse . Planning building height 9.3m and fire building height 10.8m. Design life span 30 years. area is about 21,410m2, the main part is steel structure , Auxiliary room is concrete structure.

该项目包括研究和开发工作，宿舍，设备室和门楼。规划建筑高度 9.3 米，消防建筑高度 10.8 米。设计寿命 30 年。面积约为 21,410 平方米，主要部分为钢结构，辅助室为混凝土结构。

Our contribution 特纳唐逊的贡献

Construction Management

施工管理

Turner & Townsend was appointed to provide full construction management including:

特纳唐逊被任命为提供全面施工管理，包括：

- Project programming and scheduling 项目编程和日程安排
- Change Management 变更管理
- Construction & Safety management; 施工和安全管理;
- QA/QC management 质量保证/质量控制管理

Building Extension Project of ZF-TRW Braking Extension

Making the difference 创造非凡的价值

- Making clearly requirement for project process and EHS (Environment Health & Safety) requirement when contractor is kicked off

在承包商启动时明确要求项目流程和 EHS（环境健康与安全）要求

- Full time management of construction process and raise the risks

全程管理施工过程，提高风险

- Adding value become a daily routine through implementing robust procedures such as change control process and weekly progress meetings to ensure traceability on design changes, challenging the contractors with variation valuations to ensure the client is expending reasonable amounts and contract awareness to protect the client's exposure on matters such as payments due / delay damages / retentions etc., all of which is captured in out interface-friendly monthly report

通过实施变更控制流程和每周进度会议等强有力的程序来增加价值成为日常工作，以确保设计变更的可追溯性，挑战承包商的估值变化，以确保客户花费合理的金额和合同意识，以保护客户在事项上的风险 例如付款到期/延迟赔偿/保留等，所有这些都在界面友好的月度报告中捕获

Case study

Daimler Peking – NGCC & MRAII



Client 客户

Volkswagen Automatic Transmission
(Dalian) Co., Ltd
大众汽车自动变速器大连有限公司

Client's requirements 客户需求

Due to business development, VW plans to add some new equipment to reach new production request.

由于业务发展，大众计划增加一些新设备来迎合新产品要求。

VW is going to located 41 new equipment in existing production hall. In order to provide enough utilities to these equipment, VW shall enlarge utilities abilities and modify existing piping, cabling, HVAC, etc. in production hall.

大众决定在现存的产品廊中定位 41 台新设备。为了给这些装备增强足够的实用性，大众将在产品廊中扩大公用事业的功能和塑造现存的例如钢管设计，卷桅柱和空气调节系统。

Our contribution 特纳唐逊的贡献

As the EPCM Service Provider, our responsibilities include:

作为一家集设计、采购、施工和管理为一体的服务供应公司，我们的责任如下：

- Preliminary design & Government Procedure, 初始设计和政府流程
- Design management service during detail design stage 在细节设计阶段设计管理服务
- Support VW for GC and M&E contractor tendering and bid evaluation 支持大众汽车进行 GC 和 M&E 承包商招标和评标
- Construction management service on site 现场施工管理服务
- Testing & Commissioning, and Handover 测试和调试，以及移交
- to choose GC To create a bill of quantities 选择 GC 创建数量清单

Making the difference 创造非凡的价值

Turner & Townsend study the site condition and existing as-built documentations to development the preliminary design report by providing value engineering with different scenarios, and produce project cost estimation to enable VW for project budgetary purpose. Also the technical support on package tendering and bid evaluation.

特纳唐逊通过提供不同情景的价值工程来研究现场条件和现有的竣工文件，以开发初步设计报告，并生成项目成本估算，以使大众能够实现项目预算目的。还有包装招标与评价提供技术支持。

Since renovation and upgrading works, T&T team spend more time to enable the deliverable fit the actual situation with VW's satisfaction.

自翻新和升级工作以来，特纳唐逊团队花费更多时间使得交付物符合大众满意的实际情况。

Case study

Building Extension Project of ZF-TRW Braking Extension



Client 客户

ZF-TRW Braking Co.,Ltd 采埃孚天合

Value 价值

Confidential 保密

Programme 工期

Dec 2017 - Sept 2018
2017 年 12 月到 9 月

Appointment duration 预计工期

Dec 2017 - Sept 2018
2017 年 12 月到 9 月

Client's requirements

客户需求

TRW ZJG required Construction Management for extension of braking workshop in Zhangjiagang.

采埃孚天合需要扩建在张家港的制动器车间。

The extension project includes single-storey steel structure workshop at west-south corner of 1# building, area is about 4,320m², the height and outside facade of extended building need follow original 1# building.

此次扩建工程包含了占地 4320m²，位于西南角的单层钢结构厂房，扩建后的高度和外观必须以扩建前为准。

Our contribution 特纳唐逊的贡献

Construction Management

建筑管理

Turner & Townsend was appointed to provide full construction management including:

特纳唐旭提供的全部建筑管理服务如下：

- Project programming and scheduling
项目管理及计划
- Change Management
应变管理
- Construction management;
建筑管理
- QA/QC management

Building Extension Project of ZF-TRW Braking Extension

质量监控与管理

Making the difference 创造非凡的价值

- Making clearly requirement for project process and EHS requirement when contractor is kicked off
在承包商启动时明确要求项目流程和 EHS 要求
- Full time management of construction process and raise the risks
全程管理施工过程，提高风险
- Adding value become a daily routine through implementing robust procedures such as change control process and weekly progress meetings to ensure traceability on design changes, challenging the contractors with variation valuations to ensure the client is expending reasonable amounts and contract awareness to protect the client's exposure on matters such as payments due / delay damages / retentions etc., all of which is captured in out interface-friendly monthly report

通过实施变更控制流程和每周进度会议等强有力的程序来增加价值成为日常工作，以确保设计变更的可追溯性，挑战承包商的估值变化，以确保客户花费合理的金额和合同意识，以保护客户在事项上的风险 例如付款到期/延迟赔偿/保留等，所有这些都在界面友好的月度报告中捕获

Case study

BMW RDC Warehouse



Client 客户

BBA Brilliance Automotive 宝马汽车

Value 价值

Confidential 保密

Programme 工期

Nov 2015 – Dec 2017
2015 年 11 月到 2017 年 12 月

Appointment duration 预计工期

Nov 2015 – Dec 2017
2015 年 11 月到 2017 年 12 月

Client's requirements 客户需求

BBA wants to build an extension warehouse (Phase II) approx.20,000m2 within the same plot of the existing Regional Distribution Centres Shanghai (Phase I) with the selected developer. During the contract preparation process, for construction project management and construction supervision task in terms of quality, cost and time management, BBA requires support in terms of management of the work within the RDC projects and consulting support.

BBA 希望在现有的上海区域配送中心（第一期）与选定的开发商的同一地块内建造一个约 20,000 平方米的扩建仓库（第二期）。在合同准备过程中，对于建筑项目管理和施工监理任务的质量，成本和时间管理，BBA 需要在 RDC 项目的管理和咨询支持方面提供支持。

T&T will help drive and guide this project based on our past experience of large distribution centres and manufacturing projects in China. Alongside our technical processes & templates, we believe that the 'soft' interpersonal skills are as important as technical skills when managing landlords and developers. Meeting, influencing, and driving internal stakeholders & the developer will be key to swift & accurate progress.

特纳唐逊将根据我们过去在中国的大型配送中心和制造项目的经验，帮助推动和指导该项目。除了我们的技术流程和模板，我们相信在管理房东和开发人员时，“软”人际交往技能与技术技能同等重要。会议，影响和推动内部利益相关者和开发人员将是快速准确进展的关键。

Our contribution 特纳唐逊的贡献

Turner & Townsend prepared the Building Description for BBA and discuss with developer, 3PL operator to try to get alignment and sign lease contract on time. Besides that, T&T will review all the design the provide cost estimation, change control service ect.

特纳唐逊准备了 BBA 的建筑描述，并与开发商，第三方物流运营商讨论，以便按时完成调整和签订租赁合同。除此之外，特纳唐逊还将审查所有设计提供的成本估算，变更控制服务等。

Making the difference 创造非凡的价值

Turner & Townsend is to help client not only in technical but also the permits application, communication and drive the project move forward.

特纳唐逊不仅在技术方面帮助客户，而且还帮助客户申请，沟通和推动项目向前发展。

Case study

Daimler Peking – NGCC & MRAII



Client 客户

Daimler AG – Factory Planning
戴姆勒汽车有限公司

Client's requirements 客户需求

Daimler intends to increase the production capacity of their Beijing Joint Venture. The existing manufacturing site for the Engine Plant Phase 1 in Yizhuang will be extended to approximately same the current size.

戴姆勒打算增加北京合资企业的产能。亦庄发动机厂第一期的现有生产基地将扩大至目前的规模。

Total building area is approximately 85,000m² which combines as followings:

总建筑面积约为 85,000 平方米，其结合如下：

- Main Body Shop 主题商店 71,000
- North Function Building 北功能区 9,800
- Energy Centre 能源中心 4,200

Our contribution 特纳唐逊的贡献

As the Client Representative our responsibilities include:

作为客户代表，我们的职责包括：

- To create a bill of quantities (BOQ) based on the drawings and related information provided.
根据提供的图纸和相关信息创建工程量清单（BOQ）。
- To price the BOQ based on current market rates which are either sourced from specialist vendors or our own cost database.
根据当前市场价格对 BOQ 定价，这些市场价格来自专业供应商或我们自己的成本数据库。
- To compare the completed cost estimate with LDI's high level cost estimate.
将完成的成本估算与 LDI 的高水平成本估算进行比较。

Making the difference 创造非凡的价值

Turner & Townsend made a pilot for Cost Breakdown Structure in their process to help for the cost control on project budget, this was agreed and highly appreciated by Ali Cudi Cantez of Daimler Facility Planning Manager.

特纳唐逊在他们的流程中为成本分解结构进行了试点，以帮助实现项目预算的成本控制，这得到了戴姆勒设施规划经理 Ali Cudi Cantez 的认可和高度赞赏。

Our team is providing accurate cost analysis which will advise the client on any budget issues in advance. This will allow changes to the budget to be pro-actively applied so that project progress is not jeopardised.

我们的团队提供准确的成本分析，可以提前就任何预算问题向客户提供建议。这将允许积极应用预算变更，从而不会危及项目进度。

Case study

Woodward Suzhou



Client 客户

Woodward Control Suzhou Co., Ltd
伍德沃德控制苏州有限公司

Value 价值

RMB 18.5 Million
1850 万元人民币

Programme 工期

Feb 2015 – Jan 2016
2015 年二月到 2016 年 1 月

Appointment duration 预计工期

Feb 2015 – Jan 2016
2015 年二月到 2016 年 1 月

Client's requirements 客户需求

T&T is appointed to undertake the task of consultancy services in relation to the whole process of the design, bidding and construction works of the Project. Location of project is in Suzhou which construction Area is approximately 3,500 Square meters.

特纳唐逊被指定承担与项目的设计，招标和建设工程的整个过程有关的咨询服务任务。项目位置在苏州，建筑面积约 3500 平方米。

It is a renovation project, the new plant will include office area, lobby reception area, production area, test cells, and storage area. The first floor of the new facility will be the engine testing and assembly production area, second floor will be the office area for approx. 100 people.

这是一个翻新项目，新工厂将包括办公区，大堂接待区，生产区，测试单元和存储区。新设施的一楼将是发动机测试和装配生产区，二楼将是办公区域，能容纳约 100 人。

4 sets of dyno testing cells will be set up in current phase and reserve the space for the future expansion.

并且将在当前阶段建立 4 套 dyno 测试单元，并为将来的扩展预留空间。

Our contribution 特纳唐逊的贡献

Turner & Townsend is appointed as the project Manager to deliver overall project management, including:

特纳唐逊被任命为项目经理，负责提供整体项目管理，包括：

- Project programming, 项目编程
- preparations before the commencement of construction works, 在建设工程展开前的准备工作
- design development, 设计开发
- construction budget, 建设预算
- construction bid invitation, 施工招标
- construction management, commissioning, 施工管理，调试

- trial running, completion acceptance, hand-over, evaluation, financial settlement upon construction completion
试运行, 竣工验收, 移交, 评估, 施工完成后的财务结算
- construction quality warranty, etc. 施工质量保修等

Making the difference 创造非凡的价值

- Good coordination ability is necessary in renovation project, existing building need to be protected appropriately. 改造项目需要良好的协调能力, 需要妥善保护建筑物。
- Test cells are core functional area for the project and related process requirement is complicated. T&T PM team has plentiful experience on kind of projects. 测试单元是项目的核心功能区域, 相关的过程要求很复杂。T&T PM 团队在项目类型方面拥有丰富的经验。
- Floor flatness has high request from owner to meet proceed equipment installation requirement. 地板平整度要求业主提出满足设备安装要求的要求。
- Office and reception decoration works is also key point for project. Fit-out design and installation is competent to PM team. 办公室和接待装修工程也是项目的关键点。装配设计和安装适用于 PM 团队。
- CNG(compressed Natural Gas) is combustion for engine test and the package was separated with GC. Related

coordination works is very important to project. CNG (压缩天然气) 燃烧用于发动机测试, 包装用 GC 进行分离。相关协调工作对项目非常重要。

Case study

Woodward New Plant in Tianjin



Client 客户

Woodward (Tianjin) Controls Co., Ltd
天津伍德沃德有限公司

Value 价值

RMB 42 Million
4200 万元人民币

Programme 工期

Nov 2014 – Aug 2015
2014 年 11 月到 2015 年八月

Appointment duration 预计工期

Nov 2014 – Aug 2015
2014 年 11 月到 2015 年八月

Client's requirements 客户需求

T&T is appointed to undertake the task of concept design and EPCM of the Project. Location of project is in Tianjin which construction area is approximately 33,950 square meters.

特纳唐逊被任命承担项目概念设计和 EPCM 的任务。项目选址在天津，建筑面积约 33,950 平方米。

Woodward appointed Ghafari to work out building style. TT has to carry out concept design based on Ghafari's drawings.

伍德沃德任命 Ghafari 来制定建筑风格。特纳唐逊必须根据 Ghafari 的图纸进行概念设计。

Woodward chose a developer to responsible for main construction work (steel structure, roof, facade and landscape on site). And Woodward signed a lease agreement with the developer.

伍德沃德选择了一名开发人员负责主要建筑工程（钢结构，屋顶，立面和景观）。伍德沃德与开发商签订了租赁协议。

Our contribution 特纳唐逊的贡献

Turner & Townsend is appointed as the project consultant to deliver concept design and cost estimation. If HQ of Woodward could approve the budget, TT will expand service to construction design, bidding and construction work on site. In the design phase, TT's work scope is included:

特纳唐逊被任命为项目顾问，负责提供概念设计和成本估算。如果伍德沃德总部可以批准预算，特纳唐逊将扩大现场施工设计，招标和施工的服务。在设计阶段，特纳唐逊的工作范围包括：

- In order to carry out concept design, TT is responsible for collecting all necessary information from local government,
为了进行概念设计，特纳唐逊负责从当地政府收集所有必要的信息，
- Based on our knowledge and experience, TT planed project flow chart and provided advices about how to go through local government procedure.

根据我们的知识和经验，特纳唐逊计划项目流程图并提供有关如何通过当地政府程序的建议。

Woodward New Plant in Tianjin

- Discussed process with Woodward,
与伍德沃德讨论过程,
- According to Woodward request, TT work out concept design,
根据伍德沃德的要求, 特纳唐逊制定概念设计,
- Submitted cost estimation to Woodward,
向伍德沃德提交成本估算,
- As long as Woodward approves budget, TT will go into second phase, work scope is included:
只要伍德沃德批准预算, 特纳唐逊将进入第二阶段, 工作范围包括:
- TT will support Woodward to go through all local procedure and get final approval by local government,
特纳唐逊将支持伍德沃德通过所有当地程序并获得当地政府的最终批准,
- TT will collect all process requests from Woodward production engineers,
特纳唐逊将收集伍德沃德生产工程师的所有流程请求,
- Based on approved concept design, TT will carry out construction design,
基于批准的概念设计, 我们将进行施工设计,
- Regarding construction design, TT will provide cost estimation,
关于建筑设计, 特纳唐逊将提供成本估算

- Arrange bidding work,
安排招聘工作,
- Insect developer's work on site,
监察开发人员在网站上的工作,
- Manage M&E, decoration, hook up on site,
管理 M&E, 装修, 现场挂钩,
- Prepare punch list and hand over qualified project to Woodward,
准备打卡清单并将合格项目移交给伍德沃德,

Making the difference 创造非凡的价值

- Good coordination ability is necessary in the project, especially the communication with developer and local government,
项目中需要良好的协调能力, 特别是与开发商和当地政府的沟通,
- The project flow chart has to be covered all necessary procedure, so that Woodward could prepare documents in time,
项目流程图必须涵盖所有必要的程序, 以便伍德沃德可以及时准备文,
- Floor layout has high request from owner to meet proceed equipment installation and Woodward standards,
地板布局要求业主提出要求, 以满足设备安装和伍德沃德标准,

Case study

Daimler Peking – NGCC & MRAII



Client 客户

Daimler AG – Factory Planning
戴姆勒汽车有限公司

Client's requirements 客户需求

Daimler intends to increase the production capacity of their Beijing Joint Venture. The existing manufacturing site for the MRA platform in Yizhuang will be extended to approximately double the current size. Concurrently, a new green field facility will be built close by for the NGCC platform.

戴姆勒计划增加其北京合资企业的产能。亦庄现有的 MRA 平台生产基地将扩大至目前规模的两倍左右。同时，将在 NGCC 平台附近建造一个新的绿地设施。

Our contribution 特纳唐逊的贡献

The Daimler Factory Planning department was engaged by the joint venture company to coordinate and monitor the design, construction and ramp up of both of these new facilities, including installation, testing and commissioning of the process equipment.

戴姆勒工厂规划部门由合资公司聘用，协调和监督这些新设施的设计，建造和提升，包括工艺设备的安装，测试和调试。

Daimler Factory Planning has delegated a sizable on-site team of in-house professionals to these two projects. However, owing to their size and complexity as well as the peculiarities of the local construction market, we were engaged to support the on-site team in Beijing with a carefully selected team of professionals.

戴姆勒工厂规划公司已经为这两个项目委派了一支规模庞大的现场专业人员团队。然而，由于它们的规模和复杂性以及当地建筑市场的特殊性，特纳唐逊依靠精心挑选的专业团队为北京的现场团队提供支持。

What Daimler required were specialists that possess the right mix of technical, lingual and cultural skills, with experience in the automotive sector, a quality understanding in line with Daimler's high standards and indepth knowledge of the local construction industry.

戴姆勒所需要的是拥有技术，语言和文化技能，具有汽车行业经验，符合戴姆勒高标准和对当地建筑行业深入了解的质量理解的专家

Making the difference 创造非凡的价值

Turner & Townsend Germany and China have worked closely together and managed to assemble a specialist team on short notice. As a result of our value management process applied to the early proposal stage, we were able to offer Daimler an alternative approach developed to deliver the objectives and services in a more effective and cost efficient manner.

特纳唐逊德国和中国紧密合作，并在短时间内成功组建了一支专业团队。由于我们的价值管理流程适用于早期提案阶段，我们能够为戴姆勒提供一种替代方法，以更有效和更具成本效益的方式提供目标和服务。

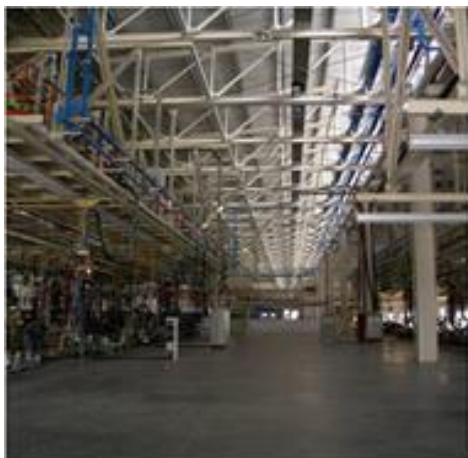
The resulting team consists of a German-speaking team leader with two decades of experience in the Chinese construction industry and six highly motivated and experienced specialists selected among our local staff, who command a skill set and bring a range of experience to the integrated team which supplements that of the client's on-site team, enabling Daimler to take decisions on the basis of transparent data and allowing us to bring value to our client and support them in their endeavor to successfully drive this ambitious project to completion.

由此产生的团队由一位具有二十年中国建筑行业经验的德语团队领导者和六位在我们当地员工中挑选的高

度积极和经验丰富的专家组成，他们掌握技能并为综合团队带来一系列经验。 为客户的现场团队提供补充，使戴姆勒能够在透明数据的基础上做出决策，并使我们能够为客户带来价值并支持他们努力成功推动这一雄心勃勃的项目完成。

Case study

Daimler New Van Factory, Fuzhou



Client 客户

Fujian Daimler Automotive CO., Ltd (FJDA)
福建戴姆勒汽车有限公司 (FJDA)

Value 价值

Confidential 保密

Programme 工期

May 2008 - Jan 2009
2008 年 5 月到 2009 年 1 月

Client's requirements 客户需求

Fujian Daimler Automotive (FJDA) is a joint venture between Fujian Motor Industry Group (FJMG), Daimler AG and China Motors Corporation (CMC). It is incorporated in the Fujian Province of the China People's Republic of China.

福建戴姆勒汽车 (FJDA) 是福建汽车工业集团 (FJMG), 戴姆勒股份公司和中国汽车公司 (CMC) 的合资企业。它成立于中华人民共和国福建省。

Phase I of the project allowed FJDA to build 40,000 vehicles per year in a 2 shifts operation.

该项目的第一阶段允许 FJDA 每年在两班制中建造 40,000 辆汽车。

- | | |
|--------------------------|--------|
| ▪ Body Shop 美化小店 | 37,260 |
| ▪ Paint Shop 油漆店 | 42,670 |
| ▪ Final Assembly 最终大会 | 34,000 |
| ▪ Warehouse A 仓库 A | 11,340 |
| ▪ Warehouse B 仓库 B | 5,985 |
| ▪ Office building 办公楼 | 6,000 |
| ▪ Canteen 食堂 | 2,000 |
| ▪ Product Lab 产品实验室 | 2,000 |
| ▪ Utility Buildings 公共建筑 | 4,800 |

Daimler New Van Factory, Fuzhou

Our contribution 特纳唐逊的贡献

As the project Management, we provided the following services:

作为项目管理者，特纳唐逊提供以下服务：

- Supported the Project Management function for the construction and commissioning of the Fuzhou facility within the existing FDA team.

支持项目管理功能，用于在现有 FDA 团队内建设和调试福州工厂。

- Provided the necessary expertise in time scheduling, information management and contract administration

在时间安排，信息管理和合同管理方面提供必要的专业知识

- Assisted in managing change and minimise the likelihood of claims.

协助管理变更并尽量减少索赔的可能性。

- By understanding the FJDA procurement department will negotiate and settle all cost claims and provide all cost reporting and forecasting on the project. Turner & Townsend have not assigned a cost specialist in the team, which help FJDA save additional cost.

通过了解 FJDA 采购部门将协商并解决所有成本索赔，并提供项目的所有成本报告和预测。特纳唐逊尚未指派团队成本专家，这有助于 FJDA 节省额外费用。

Making the difference 创造非凡的价值

- We assisted FJDA achieve its goals in relation to the construction control of the works as they progress

我们协助 FJDA 实现与工程进度相关的施工控制目标

General Manufacture Experience 传统制造业经验



Case studies

Alstom Hydropower Manufacturing



Client 客户

Alstom 阿尔斯通

Value 价值

RMB 90 Million
9000 万人民币

Programme 工期

June 2008 – March 2013
2008 年 6 月到 2013 年 3 月

Client's requirements 客户需求

Alstom Hydro China is a new 100,000 m² hydropower equipment manufacturing facility in the Tianjin Airport Economic Area (TAEA) in China. The project uses multiform energy-saving technologies to decrease CO₂ emissions, including ground source heat pumps, floor radiation, solar photovoltaics, intelligent lighting and heat recovery. Due to the use of photovoltaics the project is supported by the Chinese government's 'Golden Sun' programme, which promotes the development of pioneering, renewable energy generation solutions. When complete, the project will provide Alstom with a major new production base delivering up to 30 turbine and generator units per year with outputs ranging from 20 MW to 1000 MW, and a global centre for the research and development of hydropower generation technology.

中国阿尔斯通水电是位于中国天津空港经济区（TAEA）的新建的 10 万平方米水电设备制造厂。该项目采用多种形式的节能技术来减少二氧化碳排放，包括地源热泵，地板辐射，太阳能光伏，智能照明和热回收。由于光伏技术的使用，该项目得到了中国政府“金太阳”计划的支持，该计划旨在促进开创性的可再生能源发电解决方案的发展。完成后，该项目将为阿尔斯通提供一个主要的新生产基地，每年可提供多达 30 台涡轮机和发电机组，输出功率从 20 兆瓦到 1000 兆瓦，以及一个研究和开发水力发电技术的全球中心。

The manufacturing site includes production factories, logistic warehouses, staging areas, technical workshops, office buildings and a global technology centre which will carry out research & development activities and the testing of turbines.

生产基地包括生产工厂，物流仓库，集结区，技术车间，办公楼和全球技术中心，这些中心将开展研究和开发活动以及涡轮机的测试。

Alstom Hydropower Manufacturing

Our contribution 特纳唐逊的贡献

Turner & Townsend was appointed in 2008 to provide project and cost management services for Phase I of the project. We have subsequently been re-appointed for Phase II and III. Our role includes providing advice on the sustainability features of the scheme, managing & controlling the design, assistance in obtain the necessary authority approval and managing the tendering and contract awarding of the various work packages.

特纳唐逊于 2008 年被任命为项目的第一阶段提供项目和成本管理服务。我们随后被重新任命为第二阶段和第三阶段。我们的职责包括就计划的可持续性特征提供建议，管理和控制设计，协助获得必要的权威审批以及管理各种工作包的招标和合同授予。

Making the difference 创造非凡的价值

We are proud to have been able to offer a combination of local knowledge and global expertise in green building that has helped the client to complete the first phase on track to achieve their environmental goal, and RMB70m under their original budget.

我们很自豪能够提供绿色建筑的本地知识和全球专业知识，帮助客户完成第一阶段的实现环境目标，并在原来的预算下人民币 7000 万元。

“Turner & Townsend’s services in China were essential to the successful completion of Alstom’s first ever zero carbon facility producing turbines for hydroelectric power stations. Their exceptional team advised on all aspects of project delivery including the sustainability features which were a critical part of this project. It was an easy decision to award them Phases 2 and 3 of the project which are now underway.”

“特纳唐逊中国提供的服务对完成阿尔斯通首个为水力发电站生产涡轮机的零碳设施至关重要。他们的卓越团队和项目交付以及从各个方面提供了建议，包括可持续性功能，这是该项目的关键部分。因此决定任命他们正在进行的项目的第 2 阶段和第 3 阶段。”

Anders Maltessen

General Manager, Alstom Hydro China Co Ltd

Case study

Siemens Morgan Rolling Expansion



Client 客户

Morgan Rolling Mill (Shanghai) Co Ltd /
Siemens Real Estate
西门子摩根轧机扩张项目

Value 价值

€13.5 million including land
包括土地共 1350 万欧元

Programme 工期

Jul 2009 – Jan 2011
2009 年 7 月到 2011 年 1 月

Client's requirements 客户需求

MRM is situated in Xinzhuang Industrial Park, Minhang District, Shanghai. The new project is to build a factory and office buildings on the empty land parcel situated on the south side of the existing facility. The proposed facility aims to increase the productivity of the existing plants by 50%.

MRM 位于上海市闵行区莘庄工业园区。新项目是在位于现有设施南侧的空地上建造工厂和办公楼。拟议的设施旨在将现有工厂的生产率提高 50%。

The factory building is steel frame structure designed to carry 10t/m² floor loading and 22 different types of cranes ranging from 2t to 80t loading. Office building will house 500 staff from Siemens IS Division.

工厂建筑采用钢框架结构设计，可承载 10t / m² 的地板荷载和 22 种不同类型的起重机，范围从 2t 到 80t。办公楼将容纳西门子 IS 部门的 500 名员工。

Our contribution 特纳唐逊的贡献

Turner & Townsend offers a full project management, cost management and LEED management services to the clients.

特纳唐逊为客户提供全面的项目管理，成本管理和 LEED 管理服务。

- Liaison with government for submissions.
与政府联系提交意见书。
- Planning, scheduling & budgeting.
计划，安排和预算。
- Managing designs and design firm to produce the designs.
管理设计和设计公司以生产设计。
- Preparing tender document for general & sub-contractors. Tender evaluation & recommendation of award.
为一般和分包商准备招标文件。投标评估和奖励推荐。

Siemens Morgan Rolling Expansion

- Construction management which includes monitoring progress, working with Supervision Company for quality assurance, inspecting specification and contract compliance. Participating in inspection, testing, and commissioning and authority inspection.

施工管理，包括监控进度，与监督公司合作进行质量保证，检查规范和合同合规性。参与检查，测试，调试和权限检查。

- Guiding and advising design consultant in implementing LEED measures. Leading procedure in LEED certification.

指导和建议设计顾问实施 LEED 措施。LEED 认证的领先程序。

Key energy saving and LEED features:

关键技能和 LEED 功能：

- Solar heating for hot water

热水太阳能加热

- Air compressor heat recovery for hot water

空气压缩机热回收热水

- Roof landscape

屋顶景观

- Rain water collection for toilet flushing and irrigation

用于冲厕和冲洗的雨水收集

- Light coloured building envelope

浅色建筑围护结构

- Bicycle and motorized bicycle parking lots

自行车和机动自行车停车场

- Photo sensitive lighting

照片敏感照明

Making the difference 创造非凡的价值

This project has been delivered out of a shared project management office with the Siemens Center Shanghai. The client has clearly seen the added value from this approach, getting more value from an experience team enjoying cross fertilisation and delivery enhancement through this concentration of client specific knowledge.

该项目由上海西门子中心的共享项目管理办公室提供。客户已经清楚地看到了这种方法的附加价值，通过集中客户特定知识，从体验团队获得更多价值，享受交叉施肥和交付增强。

Case study

Siemens Windpower Blade Factory



Client 客户

Wind Power Blade (Shanghai) Co. Ltd
上海西门子风力叶片有限公司

Value 价值

Confidential 保密

Programme 工期

April 2010 – December, 2010
2010 年 4 月到 2010 年 12 月

Client's requirements 客户需求

Siemens wind power is the most dynamic business unit within Siemens and needs to ramp up their production facilities in China to be in the market in time.

西门子风力是西门子最有潜力的生意，因此他们需要加强在中国的生产设备并且及时地进入市场。

Due to sudden project management changes a certain skill set was required immediately, to which Turner & Townsend Shanghai was able to respond.

由于此次项目管理工程的变动，需要按照需求迅速改变大致的技术设备，然而特纳唐逊上海办事处力抗重压，积极回应。

The project has gone through several design adaptation to accommodate this industry's fast model and size improvement cycles, therefore the extension of the proposed factory was included in the ongoing phase I to accommodate to an enlarged product size.

此次项目为了适应企业的快速模式和尺寸增长周期，经历了多次设计修改，所以该工厂的扩建对于整理扩大的产品尺寸，还处在第一阶段。

Our contribution 特纳唐逊的贡献

- Established a quick assessment of the situation to make changes to the programme to accommodate the first product out date three months prior to plan to fall within the ongoing EXPO 2010.
迅速进行状况评估，来调整工程以适应第一批产品计划优先 3 个月于 2010 年世博会期间。
- Managed relationships with contractors and suppliers to ensure flexibility, savings and efficiencies
维护承包商和供应商的关系，保证灵活、节俭和效率。
- Monitoring of design standards and on-site activities to ensure scope and quality compliance
对设计标准和实地活动的监管来确保监察和质量承诺。
- Change management and claims defence to protect the client's budget.
应变管理和索赔维护来保护客户预算。

Siemens Windpower Blade Factory

This achieved:

实现的目标:

Quick turnaround of the project focus and getting buy in of already active contractors

对项目关注点进行迅速转变，并且和积极的承包商开展合作。

Reduces the construction time by 2 months to enable a first product out

减少了两个月的工期来使第一批产品能够按时交付。

Making the difference 创造非凡的价值

Turner & Townsend has the ability to react quickly to immediate needs and has the processes and their people the skills to turn around projects to their success. A fantastic grasp of situations and opportunities established the necessary understanding and firm management.

特纳唐逊已经能够迅速接收紧急需求，并且有途径和能力来调整项目直至成功。对环境和机会的完美掌控使得我们熟悉需求和管控严格。

Case study

Bico Fiber Project Phase 1, Suzhou



Client 客户

ES FiberVsions (Suzhou) Co., Ltd
美国维顺苏州分公司

Value 价值

USD 28,000,000
28,000,000 美元

Programme 工期

Nov 2011 - Sep 2013
2011 年 11 月到 2013 年 9 月

Client's requirements 客户需求

To strength and expand the market in China, especially satisfying the key global customer that has built a new factory in Jiangsu province, PRC. FiberVisions and JNC intends to set a 50/50 joint venture company.

为了巩固和拓展中国市场，特别是满足在中国江苏省建立新工厂的全球主要客户。美国顺维和 JNC 打算成立一家五五开的合资公司。

The Project is located in No. 29, Heng Shan Road, Suzhou, China, with a gross floor area 9,300m².

该项目位于中国苏州市横山路 29 号，总建筑面积 9,300 平方米。

The key requirement from ES FiberVisions is to manage the total project schedule, costs, buildings, utilities and non-key production equipments by project management consultant then they can focus on key production equipments, which is their know-how.

美国维顺的关键要求是由项目管理顾问管理项目总进度，成本，建筑物，公用设施和非关键生产设备，然后他们可以专注于关键生产设备，这是他们的专业知识。

Our contribution 特纳唐逊的贡献

Turner & Townsend is to be appointed to provide overall Project Management Services for the client, including:

特纳唐逊将被任命为客户提供整体项目管理服务，包括：

- Work together with Owner to establish the initial project scope and get it approved by project steering board;
与业主合作建立初始项目范围，并获得项目指导委员会的批准；
- Manage the project scopes in continuous efforts during project implementation;
在项目实施过程中不断努力管理项目范围；

Bico Fiber Project Phase 1, Suzhou

- Develop the project master schedule integrating process, buildings and all important project works in details to direct the project implementation and coordination;

在项目实施过程中不断努力管理项目范围;

- Review regularly on schedule risks and take preventive solutions;

制定项目总体时间表, 详细整合过程, 建筑物和所有重要项目工作, 指导项目的实施和协调;

- Manage the cost in depth for buildings, utilities, non-key process equipment and cabling & piping works;

定期审查进度风险并采取预防性解决方案;

- Manage the project in Design Management, Construction & Installation Management, Acceptance and Handover;

管理建筑物, 公用设施, 非关键工艺设备以及布线和管道工程的深度成本;

- Provide recommendations and supports on the integration commissioning and performance acceptance of the entire production line.

管理设计管理, 施工和安装管理, 验收和移交中的项目; 提供有关整个生产线的集成调试和性能验收的建议和支持。

Making the difference 创造非凡的价值

By virtue of professional team, Turner & Townsend has successfully achieved project realization on budget, with anticipated quality, Zero injury, especially 2 months ahead of project target. The earlier completion will allow owner to deliver local produced products to customer instead of imported from overseas, which will save customer nearly USD 1,000,000 in production costs.

凭借专业的团队, 特纳唐逊成功实现了预算的项目实现, 具有预期的质量, 零伤害, 特别是比项目目标提前 2 个月。较早的完工将允许业主向客户提供本地生产的产品, 而不是从海外进口, 这将为客户节省近 1,000,000 美元的生产成本。

Case study

Philips New Plant – Elephant in Jiaxing



Client 客户

Philips (China) Co., Ltd.
飞利浦中国

Value 价值

430 Million RMB
4.3 亿元人民币

Programme 工期

April 2014 – January 2015
2014 年 4 月到 2015 年 1 月

Client's requirements 客户需求

T&T is appointed to undertake the task of Due Diligence report, concept design and construction design of the Project. Location of project is in Jiaxing which construction Area is approximately 133,000 Square meters.

特纳唐逊被任命承担项目的尽职调查报告，概念设计和施工设计任务。项目位置在嘉兴，建筑面积约 133,000 平方米。

Philips chose a developer to fully responsible for all construction work on site. And Philips signed a lease agreement with the developer.

飞利浦选择开发人员全面负责现场的所有施工工作，飞利浦与开发商签订了租赁协议。

Our contribution 特纳唐逊的贡献

Turner & Townsend is appointed as the project consultant to deliver DD report, concept design and take lead in construction design. In the first phase, TT's work scope is included:

特纳唐逊被任命为项目顾问，负责提供 DD 报告，概念设计并在建筑设计方面处于领先地位。在第一阶段，特纳唐逊的工作范围包括：

- Survey potential sites in Jiaxing and Suzhou,
调查嘉兴和苏州的潜在地点，
- According to Philips's request, TT collected all necessary information from local government and land lord,
根据飞利浦的要求，特纳唐逊收集了当地政府和房东的所有必要信息，
- Based on our knowledge and experience, TT carry out DD report covered land information, utility capacity, planning data, communication condition, human resource, etc.
根据我们的知识和经验，特纳唐逊执行 DD 报告覆盖土地信息，公用事业能力，规划数据，通信条件，人力资源等。
- Participate negotiation between Philips and land lord,
参与飞利浦和房东之间的谈判，

Philips New Plant – Elephant in Jiaxing

In the second phase, TT's work scope is included:

在第二阶段，特纳唐逊的工作范围包括：

- Clarify all basic data of design work,
明确设计工作的所有基本数据，
- According to Philips' request, TT carried out concept design and got Philips' approval.
根据飞利浦的要求，我们进行了概念设计并获得了飞利浦的批准。
- As to concept design, TT has to get approval by local government and land lord.
在概念设计方面，我们必须得到当地政府和房东的批准。
- Based on approved concept design, TT took lead in construction design.
基于批准的概念设计，特纳唐逊在建筑设计方面处于领先地位。
- TT reviewed LDI's construction design and deliver check report to Philips.
我们审查了 LDI 的构造设计并向飞利浦提交了检查报告。
- Regarding concept design, TT provided cost estimation.
针对概念设计，特纳唐逊提供了成本估算

Making the difference 创造非凡的价值

- Good coordination ability is necessary in the project, especially the communication with potential land lords.
项目中需要良好的协调能力，尤其是与潜在房东的沟通。
- The DD report has to be covered all necessary information, so that Philips could make right decision.
DD 报告必须包含所有必要的信息，以便飞利浦做出正确的决定。
- Floor layout has high request from owner to meet proceed equipment installation requirement.
楼层布局要求业主提出满足设备安装要求的要求。
- The project has AIG (insurance company) requirement. A lot of technical requirement need to coordinate and combine into design package.
该项目有 AIG（保险公司）要求。许多技术要求需要协调并结合到设计包中。
- During negotiation between Philips and land lord, developer, LDI, TT provided strong support.
在飞利浦与陆地领主谈判期间，开发商，LDI，TT 提供了强有力的支持。

Distribution Centre and Warehouse Experience

配送中心和仓库经验



Case studies

Rolls Royce Chemical Storage



Client 客户

Rolls Royce 劳斯莱斯

Value 价值

RMB 4 Million
400 万元人民币

Programme 工期

July 2011 - September 2012
2011 年 7 月到 2012 年 9 月

Appointment duration 预计工期

July 2011 - September 2012
2011 年 7 月到 2012 年 9 月

Client's requirements 客户需求

As part of the extension of an existing marine propeller manufacturing facility in the Nanhui industrial zone in Shanghai, Rolls-Royce is constructing a 250 m² FM compliant, Class A chemical storage facility. The new facility will serve as storage for paint and hydraulic oil required in the manufacturing process.

作为上海南汇工业区现有船用螺旋桨制造厂扩建工程的一部分，罗尔斯·罗伊斯正在建设一个 250 平方米的 FM 兼容 A 级化学品储存设施。新设施将用作制造过程中所需的油漆和液压油的储存。

Due to the nature of the chemicals that will be stored the facility will comprise of a blast-proof vertical enclosure, blast-relief roof, blast-proof fittings, a spark-free hardened floor and a heat recovery blast-proof air-conditioning system.

由于将要储存的化学品的性质，该设施将包括防爆垂直外壳，防爆屋顶，防爆配件，无火花硬化地板和热回收防爆空调系统。

Our contribution 特纳唐逊的贡献

We are providing a full project management service including programming, budgeting, statutory submission, design management, tender management and construction management.

我们提供完整的项目管理服务，包括编程，预算，法定提交，设计管理，招标管理和施工管理。

We are also assisting the client in procuring all of the necessary vendors including geotechnical, general building designer, the supervision company and constructor.

我们还协助客户采购所有必要的供应商，包括岩土工程，一般建筑设计师，监督公司和建设者。

Making the difference 创造非凡的价值

Our team is providing accurate cost analysis which will advise the client on any budget issues in advance. This will allow changes to the budget to be pro-actively applied so that project progress is not jeopardised.

我们的团队提供准确的成本分析，可以提前就任何预算问题向客户提供建议。这将允许积极应用预算变更，从而不会危及项目进度。

Rolls Royce Chemical Storage

Rather than waiting for the contractor to be appointed, our team has taken over the role of statutory submission. By taking on this role at this stage we have saved three months and we have helped the client save 5% of the total investment.

我们的团队不是等待承包商被任命，而是接管了法定提交的角色。通过在这个阶段承担这个角色，我们节省了三个月，我们帮助客户节省了总投资的 5%。

Our team is providing professional design advice for a robust, energy saving, full function and cost effective building.

我们的团队为强大，节能，功能齐全且具有成本效益的建筑提供专业的设计建议。

Case study

Tesco Wuqing Distribution Center



Client 客户

Tesco China 乐购中国

Value 价值

Confidential 保密

Programme 工期

May 2011 – Dec 2011
2011 年 5 月到 2011 年 12 月

Appointment duration 预计工期

May 2011 – Dec 2011
2011 年 5 月到 2011 年 12 月

Client's requirements 客户需求

Tesco property China has recently appointed Turner & Townsend for Cost Management services on the Wuqing Distribution Centre which is conveniently, centrally located between our Beijing and Tianjin offices.

乐购物业中国最近在武清配送中心任命了特纳唐逊的成本管理服务，该中心位于北京和天津办事处之间的中心位置。

This project will be delivered over two phases with the first phase including the development of an 80,000m2 facility which as a primary regional distribution facility is critical to meet expansion plans and counter the logistical challenges experienced in what is geographically their largest single country undertaking yet. Bullet list.

该项目将分两期进行，第一阶段包括开发 80,000 平方米的设施，作为主要的区域配送设施，对于满足扩建计划和应对地理上最大的单一国家经营所遇到的物流挑战至关重要。

Our contribution 特纳唐逊的贡献

Turner & Townsend have been appointed as Cist and Contract managers for the development with services commencing in early design phases.

特纳唐逊已被任命为开发成本和合同经理，并在早期设计阶段开始提供服务。

Key services being provided:

提供的主要服务：

- Impacts of current site selection.
当前选址的影响。
- Detailed benchmark of project components.
项目组件的详细基准。
- Cost planning and value engineering to drive design efficiency.
成本计划广告价值工程，以提高设计效率。

Tesco Wuqing Distribution Center

- Tender management – PTE, tender documentation, process management, evaluation, contractor negotiation and appointment.

投标管理 - PTE, 招标文件, 流程管理, 评估, 承包商谈判和预约。

perspective and the flexibility that is required when adapting project strategies on a pan-China programme.

通过了解乐购的发展过程以及在调整泛中国项目战略时所需的灵活性, 特纳唐逊能够突出关键风险和机遇。

Making the difference 创造非凡的价值

The project procured through an EPC arrangement raised particular challenges revolving around the successful integration of numerous operational department requirements to minimise costly client changes inherent under EPC. Turner & Townsend are well placed to tackle these challenges following our involvement in Tesco's Jiashan Distribution centre in East China which due to 1,400km apart were subject to different local regulations and construction practices.

通过 EPC 安排采购的项目引发了特殊挑战, 围绕成功整合众多运营部门要求, 以最大限度地减少 EPC 固有的昂贵客户变更。我们参与了位于华东地区的乐购嘉善配送中心后, 特纳唐逊有能力应对这些挑战, 该中心距离不同的当地法规和建筑实践, 相隔 1,400 公里。

Turner & Townsend were commended for our ability to highlight key risks and opportunities through an understanding of the development process from Tesco's

Case study

AMB Lujia Logistics DC Center, Kunshan



Client 客户

Prologis 普洛斯

Value 价值

RMB 66,796,773
66796773 元人民币

Programme 工期

2013 – 2016

Client's requirements 客户需求

The project comprises two phases which new built warehouse to develop in Lujia, Kunshan.

该项目包括两个阶段，即在昆山陆家开发的新建仓库。

The works include the completion of Phase I -23,542sqm and Phase II - 20,175sqm. Scope of work including but not limited to soil treatment, Piling works, civil works, Finishes works, Window & Doors works, Metal works, Fire fighting works and alarm system, Drainage works and site cleaning, electrical works, air-conditioning works, HVAC works, site levelling, road works, external M&E works, sub-building works, landscape works, and others works (temporary fence, signage, traffic logo..Etc). Construction works including supply, installation, coordination, management, inspection and testing until works completion and rectification period.

工程包括完成第一阶段-23,542 平方米和第二阶段--20,175 平方米。 工程范围包括但不限于土壤处理，打桩工程，土木工程，装修工程，门窗工程，金属工程，消防工程及报警系统，排水工程及工地清洁，电力工程，空调工程，暖通空调 工程，场地平整，道路工程，外部 M&E 工程，子建筑工程，景观工程和其他工程（临时围栏，标牌，交通标志.....等）。 建设工程包括供应，安装，协调，管理，检查和测试，直至工程竣工和整改期。

Our contribution 特纳唐逊的贡献

- initial assistance with cost plan
初步协助成本控制
- preparation of complete tender documents and Bill of Quantity
准备完整的招标文件和工程量清单
- pre-tender and post contract provided
提供招标前和合同后的合同
- contract administration of all client contracts
合同管理所有客户合同

AMB Lujia Logistics DC Center, Kunshan

- change control management
改变控制管理
- risk and value engineering
风险和价值工程

Making the difference 创造非凡的价值

- Fully integrated requirements into design and construction to meet client's need
完全集成设计和施工要求，以满足客户的需求
- Successfully managed the selection of the building with our client
与我们的客户成功管理建筑物的选择
- Set, maintained and achieved the client targets in terms of budget and programme
在预算和计划方面设定，维护并实现客户目标

Case study

Prologis Logistic Centre, Suzhou Xinxu



Client 客户

Prologis 普洛斯

Value 价值

Confidential 保密

Programme 工期

2013 – On going

2013 年至今

Client's requirements 客户需求

The project is about to develop a new built warehouse in Xinxu Suzhou.

该项目即将在苏州新圩开发新建仓库。

The works include the completion of 35,042sqm logistics centre the scope of work included soil treatment, piling, structural, architectural, MEP systems and external works. Construction works included supply, installation, coordination, management, inspection and testing until works completion and rectification period.

工程包括完成 35,042 平方米的物流中心，工作范围包括土壤处理，打桩，结构，建筑，MEP 系统和外部工程。建设工程包括供应，安装，协调，管理，检查和测试，直至工程竣工和整改期。

Our contribution 特纳唐逊的贡献

- initial assistance with cost estimating
成本估算的初步帮助
- preparation of complete tender documents and bills of quantities
准备完整的招标文件和数量清单
- pre-tender and post contract cost management
投标前和合同后成本管理
- contract administration of all client contracts
合同管理所有客户合同
- change control management
改变控制管理
- risk and value engineering
风险和价值工程

Making the difference 创造非凡的价值

- Fully integrated requirements into design and construction to meet client's need
完全集成设计和施工要求，以满足客户的需求
- Successfully managed the selection of the contractor with our client
成功管理承包商与客户的选择
- Set, maintained and achieved the client targets in terms of budget and programme
在预算和计划方面设定，维护并实现客户目标

Case study

Iron Mountain



Client 客户

Iron Mountain Records Management
铁山信息管理有限公司

Value 价值

Confidential 保密

Programme 工期

2014-2015

Appointment duration 预计工期

2014-2015

Client's requirements 客户需求

Client required premises to be fire-fighting protected according to FM standard. In-warehouse, man-up racking was erected combined with two sets of order pickers for operation. In addition, a vault was built to meet four-hour fire resistance requirement, with mobile rack for LTO storage. The vault was equipped with CRAC for climate control, VESDA air sampling to detect, and gas suppression system to put out fire. The security system was installed for both warehouse area and office, which consists of CCTV, audio entry, intrusion and access control. The facility offers comprehensive records management, data protection and information destruction systems.

客户要求房屋按照 FM 标准进行灭火。仓库内装有人工货架，并配有两套拣货员进行操作。此外，还建立了一个保险库，以满足四小时的防火要求，并配备用于 LTO 存储的移动机架。该保险库配备了用于气候控制的 CRAC，用于检测的 VESDA 空气采样和用于灭火的气体抑制系统。仓库区和办公室都安装了安全系统，包括闭路电视，录音，入侵和访问控制。该设施提供全面的记录管理，数据保护和信息销毁系统。

Material used were all FM approved or according to FM standard, from diesel pump to sprinklers. The products were either from famous joint venture or abroad. Even the layout of water sprinkling piping system was designed as per FM guidance book. The security system plays another importance role in Iron Mountain operation, which was designed strictly according to IronM internal specifications.

所用材料均经过 FM 认证或符合 FM 标准，从柴油泵到喷头。产品来自著名的合资企业或国外。甚至水喷淋管道系统的布局也是根据 FM 指导书设计的。安全系统在铁山操作中扮演着另一个重要角色，该操作严格按照铁山内部规范进行设计。

Our contribution 特纳唐逊的贡献

T&T is responsible for the design coordination and site delivery, i.e. project management life cycle service which mainly consists of the following work, such as:

特纳唐逊负责设计协调和现场交付，即项目管理生命周期服务，主要包括以下工作：

- Cost planning;
成本计划;
- Tender administration;
招标管理;
- Contract management and design supporting;
合同管理和设计支持;
- Site supervision;
现场监督;
- Programme and schedule management;
计划和进度管理;
- Cost control and management;
成本控制和管理;
- Testing, inspection and taking-over of premise;
测试，检查和接管前提;
- Coordinate with government inspection;
协调政府检查;

Making the difference 创造非凡的价值

Effective communication between client, end-user, fire engineers, GC and various contractors, we was able to deliver the high quality of installation, fulfil requirements of both FM and IronM standards, especially for the fire-fighting, and security requirements as well.

在客户，最终用户，消防工程师，GC 和各种承包商之间的有效沟通，使得我们能够提供高质量的安装，满足 FM 和铁山标准的要求，特别是对于消防和安全要求。

Case study

BMW RDC Warehouse



Client 客户

BBA Brilliance Automotive 华晨宝马

Value 价值

Confidential 保密

Programme 工期

Nov 2015 – Dec 2017
2015 年 11 月到 2017 年 12 月

Appointment duration 预计工期

Nov 2015 – Dec 2017
2015 年 11 月到 2017 年 12 月

Client's requirements 客户需求

BBA wants to build an extension warehouse (Phase II) approx.20,000m² within the same plot of the existing Regional Distribution Centres Shanghai (Phase I) with the selected developer. During the contract preparation process, for construction project management and construction supervision task in terms of quality, cost and time management, BBA requires support in terms of management of the work within the RDC projects and consulting support.

BBA 希望在现有的上海区域配送中心（第一期）与选定的开发商的同一地块内建造一个约 20,000 平方米的扩建仓库（第二期）。在合同准备过程中，对于建筑项目管理和施工监理任务的质量，成本和时间管理，BBA 需要在 RDC 项目的管理和咨询支持方面提供支持。

T&T will help drive and guide this project based on our past experience of large distribution centres and manufacturing projects in China. Alongside our technical processes & templates, we believe that the 'soft' interpersonal skills are as important as technical skills when managing landlords and developers. Meeting, influencing, and driving internal stakeholders & the developer will be key to swift & accurate progress.

特纳唐逊将根据我们过去在中国的大型配送中心和制造项目的经验，帮助推动和指导该项目。除了我们的技术流程和模板，我们相信在管理房东和开发人员时，“软”人际交往技能与技术技能同等重要。会议，影响和推动内部利益相关者和开发人员将是快速准确进展的关键。

Our contribution 特纳唐逊的贡献

Turner & Townsend prepared the Building Description for BBA and discuss with developer, 3PL operator to try to get alignment and sign lease contract on time. Besides that, T&T will review all the design the provide cost estimation, change control service ect.

特纳唐逊准备了 BBA 的建筑描述，并与开发商，第三方物流运营商讨论，以便按时完成调整和签订租赁合同。除此之外，特纳唐逊还将审查所有设计提供的成本估算，变更控制服务等。

Making the difference 创造非凡的价值

Turner & Townsend is to help client not only in technical but also the permits application, communication and drive the project move forward.

特纳唐逊不仅在技术方面帮助客户，而且还帮助客户申请，沟通和推动项目向前发展。

Our business 我们的生意

We are an independent professional services company specialising in programme management, project management, cost and commercial management and advisory across the real estate, infrastructure and natural resources sectors. 我们是一家独立的专业服务公司，专门从事项目管理，成本和商业管理，以及不动产、基础设施和自然资源领域的咨询服务。

With 108 offices in 45 countries, we draw on our extensive global and industry experience to manage risk while maximising value and performance during the construction and operation of our clients' assets 我们在 45 个国家设有 108 个办事处，利用我们广泛的全球和行业经验，在管理风险的同时，在客户资产的建设和运营过程中实现价值和绩效最大化



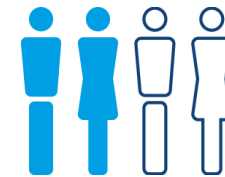
108

offices 办事处



45

countries 国家



5,209

people 人员



£549m

turnover 营业额



94

languages (including sign languages) 语言



1946

established 已完成

Our growth 我们的发展



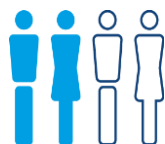
£549m

turnover 营业额



£56m

operating profit 营业利润



5,209

people 人员



Awards

获奖情况

Selected recent international awards include:

近期获得的国际奖项包括：

- **Construction Excellence SECBE Awards 2018**
Innovation Award
阿姆斯特丹创新大奖评选
- **ACE Awards 2018**
2018 年度 ACE 大奖
Best UK business performance for large firms
英国大型企业最佳经营业绩奖
- **MEED Awards 2018**
National Education Project of the Year
年度国家教育项目
- **Association of Project Management Awards 2018**
2018 项目管理协会奖
Project of the Year: Engineering, Construction and Infrastructure
年度工程：工程、建筑和基础设施
- **Royal Institution of Chartered Surveyors Awards 2017**
2017 英国皇家特许测量师学会奖
Zoe King, Young Surveyor of the Year
Zoe King, 年度青年测量师
- **ACE European Awards 2017**
2017 欧洲 ACE 奖
Patricia Moore, Sterling Award
Patricia Moore, 斯特林奖
- **Building Awards 2017**
2017 建筑奖
Vincent Clancy, CEO of the Year
Vincent Clancy, 年度首席执行官
- **South African Planning Institute Awards 2016**
2016 南非规划研究院奖
Prestigious Planning Award, Ekurhuleni Or Tambo Aerotropolis Master Plan
杰出规划奖, Ekurhuleni Or Tambo Aerotropolis 总体规划
- **Qatar British Business Forum 2016**
2016 卡塔尔英国商业论坛
Organization of the Year
年度组织
- **Hong Kong Quality Building Awards 2016**
2016 香港建筑质量奖
Grand Award for High Standard of Quality for Hong Kong Housing Society
香港房屋协会高质量大奖
- **UK STEM Inspiration Awards 2016**
STEM Ambassador of the Year
Joanne Haskins, Birmingham
STEM 年度最佳大使
乔安娜·哈斯金斯, 伯明翰
- **The 9th South African Construction Awards 2016**
2016 第九届南非建筑奖
Women in Construction Pioneer of Innovation Award and Women in Construction Award, Noluthando Moloo, Johannesburg
建筑先锋女性创新奖和建筑女性奖, Noluthando Moloo, 约翰内斯堡

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DOCUMENT1

文件 1
