

21.

设计理念和流程



DESIGN APPROACH & PHILOSOPHY

设计理念和流程：

CULTURE

Web Structures nurture a research culture within the practice which encourages value added solutions for all projects undertaken.

Employing diverse talent from the UK, Europe and Asia, Web Structures provide quality consultancy in civil, structural and related engineering disciplines. The practice has regional offices in Singapore, Malaysia and Indonesia, with a European office based in London.

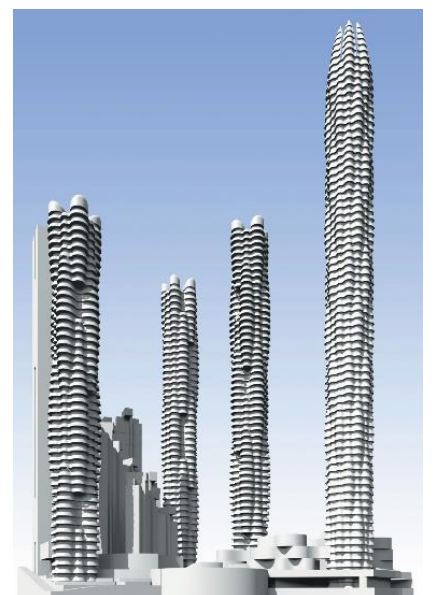
High-quality engineering solutions are consistently created for every project. Web Structures' participation in award winning bridges, resort hotels, condominiums, commercial and industrial projects, and selected privately-owned residences – demonstrates an in-depth knowledge of the properties of all building materials and the engineering principles involved in their efficient use. This knowledge enables Web Structures to provide solutions which stretch the boundaries of existing work practices.

A specialist design service deals with international product manufacturers and suppliers and regularly assists local and international contractors via the submission of alternative design proposals at tender stage. Expert witness advice is offered to law firms involved in litigation disputes as an additional service.

企业文化

WS秉持研究精神，激励增值服务

WS精英，来自全球，以独到的视野，在建筑结构，土木工程及其他相关领域，给我们尊贵的客户带来全方位的咨询服务。WS在新加坡，马来西亚，上海，印度尼西亚和伦敦设有区域公司。WS咨询涵盖：长跨度大桥，豪华度假酒店，高尚公寓大厦，综合办公大楼等各类商业和工业项目。公司高品质的工程设计流程和来自全球的优秀工程师队伍，锐于进取，勇于开拓创新，将固有的工程专业实践界限不断拓展延伸。每一工程无不显示了WS对所涉材料和工程原则的精准把握，并以创新的替代方案设计与知名国际建筑商在各类工程竞标合作中完美呈现。WS同时也为律师事务所在工程诉讼纠纷中提供专家证人服务。



CREATIVE CONCEPTS

Web Structures consider safe, buildable and economical structural engineering to be the expected norm. Innovation and creativity are the additional essentials associated with the practice.

A proactive attitude, typified by complete participation in the early stages of a project, guarantees innovative solutions to initial engineering tasks that add value to the project at an early stage and save costs in the long term.

After ensuring the development and consolidation of an overall structural concept which fulfils the project's needs and is responsive to all of its requirements, Web Structures concentrate on the details

创新理念

WS认为安全，可建性和经济合理的结构是工程的基本。WS坚信创新和创造才是实践成功的关键。

WS在每一个项目的早期阶段，以积极主动的态度，创新的解决方案，全程参与。如此，任何在早期初步设计阶段增值的努力，将确保长期的成本效益。

WS关注细节。为项目所需，确保顺应整体结构概念。



DESIGN APPROACH & PHILOSOPHY

设计理念和流程：

INNOVATIVE DETAILS

Web Structures’ ability to predict the behaviour of structural materials in any given situation means that materials can be manipulated so that details can be ‘articulated’ or ‘suppressed’, depending on the specific requirements of each project.

Attention to detail is a recognized trademark of Web Structures projects.

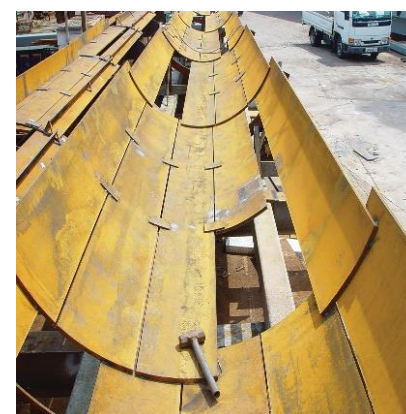
Web Structures engage in the assimilation of all available information concerning a project. This material is then evaluated and reassessed in conjunction with original research commissioned by Web Structures. A report which draws objective conclusions from a solid knowledge base is then presented to the project team.

A thorough understanding of the details of every project combined with technical understanding of various structures and materials guarantees a project’s success.

创新的细节

基于对工程材料性能的精准把握，WS因地选材，善用资源，保护环境。精准把握在特定情况下的结构材料特性，WS视项目的具体要求而定，结构构件可以”显现“或”隐蔽“。

细节决定一切。从最初资料的收集，整合，到结合公司原有的研究成果，进行评估，再考核，最后以客观结论的报告，与设计团队分享。对每一项工程在细节的透彻理解，技术的灵活运用以及选材的精准把握，成就了WS的无数经典。



SPECIALIST SERVICES

Web Structures’ specialist services include façade technology & curtain wall consultancy.

Web Structures possess state-of-the-art knowledge and experience of materials and construction techniques which can be applied to special structures. A specialist division has developed design charts for a range of proprietary Aluminium Louvers in the most severe of wind conditions.

Design against punching shear failure in flat slabs using shear studs is routinely performed for a specialist manufacturer.

Assessment and upgrading of existing structures is another area in which Web Structures possess expertise & know-how.

The application of advanced design knowledge, which utilises composite materials, high strength concrete, and steel, pre-stressed and precast concrete, is routine. The provision of seismic and wind engineering analysis, design, and detailing is comprehensive.

All these services are consolidated and finely tuned using cutting-edge design technology.

特种咨询服务：

WS特种咨询服务涵盖幕墙工程，防震抗震设计，抗风分析设计，工程（安全/造价）审核和增值工程

WS工程师把材料学和建筑技术在最新领域的研究成果，灵活运用于特种咨询服务中。例如，幕墙设计部研发了各种设计图表，根据不同的风载条件从而设计不同的幕墙系统。以及为特种结构供应商所提供的无梁楼板剪力钉的设计，检测和运用。为现有的结构进行检测，评估和升级加固。

先进的设计思想，善于运用高强混凝土，混合材料和绿色环保材料，是WS的优势所在。



DESIGN APPROACH & PHILOSOPHY

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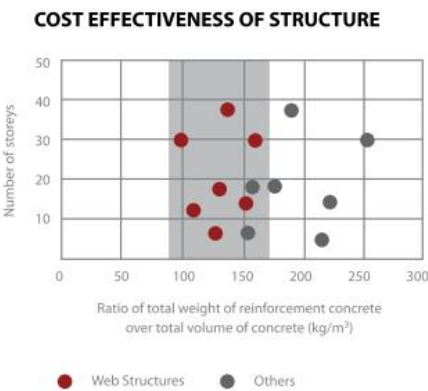
VALUE ENGINEERING

Web Structures consider engineering value to be a primary concern. Successful structural economics requires the fusion of a pragmatic approach, a willingness to challenge assumptions, solid practical application and strict cost control.

A detailed study of design load requirements is undertaken at an early stage to avoid unrealistic loading allowances. Alternative designs are then developed in conjunction with the client’s project team, quantity surveyors and/or cost consultants so that the most cost effective structure is selected for further detailed development.

Throughout this process healthy scepticism of existing work practices is encouraged. Every project is viewed in an individual light, some projects require more technological solutions, some demand simplicity itself.

Extensive sketches and drawings are produced to supply every piece of relevant information at every stage of the project. This enables full coordination with the consultant team and a clear transfer of information to the contractors, on time and within budget.



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PROTOTYPE TESTING

Design of the test specimen requires a high level of familiarity with structural behaviour – A level of familiarity which web structures possess.

The practice is able to draw from its vast range of laboratory testing experience. Solid links with international laboratories and schools of higher education enable Web Structures to conduct prototype and other testing programs on any component.

Assessment of existing structures using destructive, semi-destructive and non-destructive testing techniques, including appraisal of dynamically sensitive structures and details, forms an integral part of Web Structures’ services.

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