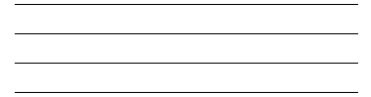


Davis Langdon 



WHO WE ARE

Davis Langdon provides a comprehensive and integrated construction consultancy delivered through our project management, cost management, risk consulting, sustainability consulting and research business units. Our multi-disciplinary teams possess a wide ranging understanding of construction, making it possible for us to plan, manage and control all aspects of your projects. Our integrated knowledge galvanizes decision making, bringing much needed certainty to the development process. Understanding you, your goals, and the challenges you face, we help you develop the knowledge you need, when you need it, to stay in control and move forward with confidence. We help you navigate the complex and ever-changing interaction of quality and quantity, time and cost, so that you can achieve the most, and the best projects, for your capital investment.

Our first North American office opened in California in 1974. We now operate throughout North America and our international group of over 5,000 professionals spans Europe, the Middle East, Asia, Australasia, and Africa. Organized in mutually-supportive offices, each with a dedicated regional focus, we bring global resources to address local circumstances. We continually evaluate both our capabilities and the needs of the marketplace to develop new and better ways to serve our clients. Our teams bring together creative minds from many disciplines, resulting in a comprehensive integration of knowledge and a unique grasp of the economics of sustainable development.

Davis Langdon's services are structured to be imaginative, timely and accurate, and to make a measurable difference to our client's projects. We are passionate about developing positive client relationships, harnessing the best teams and delivering successful solutions that fulfill aspirations, fit the budget and respect the environment. Our commitment is to understanding our clients' needs and to applying integrity in all that we do.

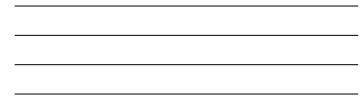
Knowledge



Knowledge

Integrated Services Model from feasibility to occupancy

	Plan			Design Implementation			Procurement		Construction		Occupancy
Project Management	Confirm Project Brief	Organize Team, Establish Processes and Procurement Methods	Schedule Project Timeliness	Design Procurement Planning	Assemble Construction Team	On-going Team Management	Implement Construction Procurement Strategy	Manage Bidding & Buy-Out Process	Provide Project Oversight During Construction	Manage Project Handover & Owner Move-In	Post-Occupancy Evaluation
Cost	Feasibility Studies	Initial Plan for Overall Project Cost	Alternative Cost Studies	Design Stage Cost Control, Incorporating Value Engineering Studies	Cash Flow Analysis	Life-Cycle Cost Studies		Bid Evaluation and Negotiation	Change Order Reviews and Interim Payment Approvals	Final Account and Claims Settlement	
Value & Risk	Identify & Report on High Level Risks	Recommend Mitigation Measures	Advise on Contingency Provision	Identify Detailed Risk Exposure and Advise on Mitigation	Facilitate Risk and Value Management Workshops	Allocate Contingency	Risk Strategies During Bid Process		Manage Risk Register	Close-Out Register	Review, Manage & Report Associated Risks
Sustainability	Develop Standards and Benchmark	Evaluate Sustainable Goals with Business Case		Review Design Documents, and Evaluate Methods to Meet Sustainable Design Goals	Energy Modeling to Compare/Evaluate Systems	Monitor Design Development & Provide Technical Assistance		Facilitate Contractor Workshops on Sustainable Practices	Monitor Sustainable Goals During Construction & Coordinate Documentation	Final LEED Certification	Post-Occupancy Evaluation
Research	Develop Cost Benchmarks & Guidelines	Economic Modeling in Support of Long-Term Planning	Evaluate Local Market Conditions, Local and Global Inflationary Forces	Research of Construction Technology	Benchmark Studies		Research of Construction Contracting				



IT STARTS WITH A PLAN

Projects and programs succeed when properly planned from the start. The purpose must be thoroughly understood, the budget must be aligned with that purpose, and the timeline must be achievable. The right team must be assembled and properly organized; the risks and their mitigation measures must be identified. Davis Langdon provides the necessary detailed planning to complete these steps to determine your project's feasibility and chart a road map for its success. We call this first step in our project management service "Project Delivery Planning".

Approach

Davis Langdon's expertise in project, cost and risk management is key to this planning process. We bring together multi-disciplinary expertise from within Davis Langdon, from client teams and other stakeholders to ensure that the goals of the project are thoroughly evaluated, and success targets established. It is a collaborative process.

Within Project Delivery Planning is a mechanism to ensure that sufficient due diligence has been performed in each area of analysis, and that clear recommendations are provided to define how your project should be organized, funded, procured, resourced and constructed.

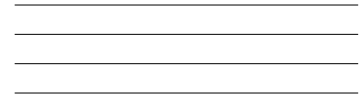
The Project Delivery Plan is customized for each project or client need, but the components typically include:

- Organization and processes – Recommendations on staffing needs, organizational structure, communication methods and procedures.
- Delivery – Advice on constructability issues, procurement methods and contracts, recommendations on appropriate contractors, design teams and other consultants.
- Benchmarks – Reference to past projects of a similar type and function, to identify past budget, schedule and organizational issues experienced.
- Sustainability goals – Identification of how the project (or program) might achieve specific "green" targets, plus the associated life cycle impacts.
- Budget – An overall project budget based upon the identified scope of the project.
- Schedule – A timeline showing an estimated time for completion, with milestone events and deadlines for specific pieces of the project or program development.
- Risk – Conducting a workshop with all stakeholders to assess the major risks to completion of the project, development of a detailed risk listing and recommendations on how each risk can be mitigated.

The detail and content of the Project Delivery Plan is flexible to suit specific project needs. Davis Langdon dovetails the Project Delivery Plan with our client's in-house methodologies and systems so that we add value without unnecessary layers of analysis.

Benefits

The Project Delivery Plan provides a comprehensive analysis and implementation plan for any project or program. The process has been designed specifically to avoid the costly and time-consuming reassessment and restructuring of projects that often occurs when inadequate planning is undertaken. It searches for the most cost effective solutions, the best use of resources, and the fastest delivery methods – the route toward the best possible outcome for your projects.



PROJECT MANAGEMENT

In an environment of competing interests, demanding timescales and constrained budgets, projects of all size, type and complexity require dedicated management to ensure a project's success.

Davis Langdon's project management provides vital, independent and professional service to plan, lead, organize and control the management of projects and programs, from inception to reality. Recognized as one of the world's leading providers of management and consultancy services for the property and construction industry, we employ highly skilled project managers from a broad spectrum of professional disciplines – offering experience across a range of sectors. These experts are teamed with our cost, risk and global market research professionals to ensure value is achieved and risk is appropriately managed throughout the project cycle.

Defining Needs and Goals

In taking responsibility for overall project delivery, we provide a comprehensive approach to project management by recognizing needs, developing the vision, understanding value requirements, implementing processes and turning ideas into reality. We create the conditions for success by ensuring that all interests and requirements are understood from the outset using our Project Delivery Plan, which charts the path for your project's success. This ensures that the project scope is aligned with budget and schedule, that the right organizational structure for the entire project team is established, that procurement methods are appropriate, contracts are administered in the correct form and major risks to the project's success are identified and managed. Alternative project proposals will be assessed at this stage.

Using the Project Delivery Plan as a guide, we assist in assembling the right team for the project. We are committed to building and managing teams with a common culture of delivering excellence and we strive to engender healthy and creative working relationships throughout the life of the project. As the client's representatives we provide our clients with a single point of contact to manage third parties, contractors and suppliers.

Moving Forward with Confidence

Davis Langdon coordinates, manages and oversees all resources throughout each phase of the project. Looking ahead, we coordinate information to provide early warnings on all matters likely to affect budget, schedule or quality.

Our advice on contracts and bidding procedures enables clients to understand substantive differences among proposals. We facilitate agreement on price and schedule, and identify warranty and insurance requirements. Throughout the process, our oversight brings a measure of confidence to the fluid context of changing markets and unforeseen site issues.

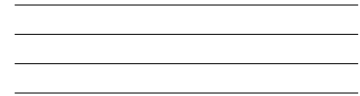
Delivering the Future

We guide the project through completion, commissioning, occupancy and into operation. We manage the timely and accurate completion of the project punch list and delivery of as-built drawings, permits, warranties, manuals and training to ensure a smooth transition of the asset through to ongoing management.

Our key Project Management services include:

- Project delivery and execution planning
- Team organization
- Establish processes and procurement strategies
- Design and construction team selection
- Scheduling
- Integrated cost, value and risk management
- Manage design and construction teams
- Control bidding and buy-out processes
- Commissioning oversight
- Manage handover and move-in
- Post-occupancy evaluations





COST MANAGEMENT

A key measure of any construction project's success will inevitably be its ability to deliver value for money in the eyes of those who commission, fund or occupy such buildings. Our cost consulting services are specifically designed to provide the maximum amount of information on costs at the earliest possible time in the planning, design and construction processes, making it possible to effectively plan, control and manage the cost of construction projects.

We provide a full range of cost management services to achieve this during a project life span, from advising on the feasibility of a project at the early concept stages (including total project cost and operational cost estimates), to settling the final contractor payments at the end of the construction period. During the design phase we provide cost planning services to maintain an alignment between project requirements, the design and funding availability. We do this on behalf of the owner or the design team. We also provide value engineering and life-cycle cost studies, funding schedules and cash flow analyses. We evaluate and negotiate bids, and during construction we manage contractor payments, including change order and claims reviews and settlements.

Sector Focus

Sector specialization has allowed Davis Langdon to focus and tailor its entire range of services around the unique requirements of our clients. Our range of services draws upon the focused expertise of our team members. This is complemented by dedicated and detailed cost and benchmarking databases, which result from Davis Langdon's commitment to research and innovation. Such benchmark data, focused as it is on specific building types, allows us to develop the most realistic and informed initial cost projections. Establishing accurate cost projections at the start is key to successful cost management.

Regardless of the building type, our service offering is designed to provide solutions that are sensitive to the specific commercial drivers intrinsic in the different markets of our Clients.

Integrated Services

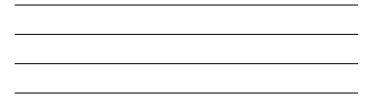
We integrate our risk management processes into all our cost planning work to ensure that risks in the development are accurately identified and properly managed, and appropriate contingencies are applied to our cost projections. Our sustainability consulting services also are integrated into our cost consultancy role to ensure that sustainability goals are correctly accounted for in the initial budgeting exercise, and that all sustainability options are appropriately considered and priced throughout the design process.

Established Expertise

Our cost consulting experience in the North American market is unsurpassed. For more than 35 years we have gained a reputation for working with some of the world's leading architects, often on extremely complex building types. We understand the connection between schedule, quality, program and cost, and use that knowledge to provide you with practical, thorough advice that leads to the best possible cost outcomes.

Our key Cost services include:

- Feasibility studies
 - Project budgets
 - Cost estimates
 - Cost management and control
 - Value engineering
 - Cash flow studies
 - Life-cycle cost analysis
 - Bid analysis
 - Progress payment approvals
 - Change order reviews
 - Claims and final account settlements
-



VALUE AND RISK MANAGEMENT

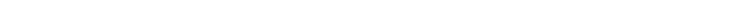
Fully understanding the factors that add risk and managing those factors are both critical to the success of any project. Davis Langdon provides a comprehensive value and risk management consultancy designed to correctly define and articulate project objectives, enhance the delivery of value and reduce risk throughout the project life cycle. Early in the process of a development we bring together all the stakeholders for the project and facilitate a risk identification session. At this time, project objectives are clearly established and aligned with the client's business requirements. Risks are evaluated for their likelihood and impact on both schedule and cost. We work with the stakeholders to identify ways to reduce, transfer, avoid and manage those risks, and regularly update the risk register and mitigation plans as the project progresses.

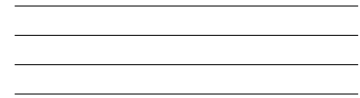
We develop a cost risk model to determine final cost ranges. And as each project progresses, we update the cost risk models to monitor the level of contingency required to complete the project, and advise the client as to how much contingency is required as the uncertainty diminishes. Similarly we develop schedule risk models; we assess uncertainty around planned durations, the impact of specific risks and determine the likely range of completion dates and confidence levels in the completion target. Davis Langdon continually reviews and updates the risk models during the design and construction phases.

Davis Langdon's risk consultancy is led by skilled risk workshop facilitators, trained to improve communications and understanding, and collaborative team working. We ensure that the project team has identified and actively managed those events that could otherwise impair a successful project outcome. Consequently, our projects are more likely to deliver a result that meets clients' expectations. We help our clients create the conditions for success.

Our key Value & Risk services include:

- Conduct team interviews
- Facilitate workshops
- Cost and schedule risk analysis
- Provide training to project staff, owners and contractors
- Opportunity analysis typically through mitigation workshops and / or linked to formal value engineering reviews
- Evaluation of alternative strategies
- Develop risk action plans
- Develop and maintain risk management plans
- Address changes to risk profiles
- Provide overall risk summary reports





SUSTAINABILITY

To achieve a successful green building, sustainability must be incorporated throughout the entire development of a project, from design to construction to operations. Davis Langdon accomplishes this by connecting our sustainability services to our cost, risk, research, and project management consultancies, ensuring that your sustainability objectives and needs are thoroughly considered and managed.

Our team consists of professionals with backgrounds in a wide variety of design and construction disciplines. This breadth of knowledge allows us to combine objective, practical advice with technical expertise, and to communicate effectively with the design and construction teams, building relationships that achieve shared goals. Members of our team act as LEED® assessors on behalf of the U.S. Green Building Council (USGBC) and assist in developing LEED criteria for the industry, making us exceptionally well qualified to take your building to the sustainability level you require.

Sustainability Support for Design and Construction Projects

Davis Langdon begins by determining the feasibility of the project; measuring the building and analyzing the sustainability potential in the context of your project goals. We develop metrics by which to measure success of your green efforts, and engage with the client, design team, and significant stakeholders to develop specific design strategies and processes to ensure effective achievement of sustainability goals.

During design, we provide technical support to the team, including specifications, research, cost and constructability advice. Utilizing energy, solar and carbon modeling, and life-cycle cost analysis, we quantify sustainability to facilitate constructive decision-making. In the construction phase, we extend our technical support to the construction team, ensuring they have the knowledge and tools to achieve your sustainability goals. Throughout the process, we review design documents and coordinate documentation for LEED certification, and report on the results based on other metrics. Post occupancy evaluations are conducted to verify achievement of sustainability goals, and for continued monitoring of the building's performance over time.

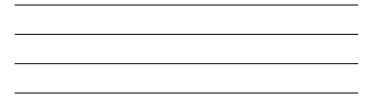
Sustainability Support at the Policy Level

Davis Langdon develops sustainability policies for clients such as universities, municipalities, agencies and property owners. We engage with clients to develop their internal processes to increase effectiveness and reduce costs across multiple buildings and entire campuses or programs. We develop and present training programs and manuals designed for your specific sustainability requirements. The resulting policies assist the design teams in meeting new standards and ordinances.

In 2008, we received the USGBC's Leadership Award for our research work in sustainability. As noted experts in the field, we are committed to be the trusted source for your green building needs and to inspire greater accomplishments for built environments. With Davis Langdon's sustainability consulting, your projects and programs will achieve improved energy and environmental performance, contributing to a more environmentally responsible, profitable, and healthy community in which to live and work.

Our key Sustainability services include:

- LEED Project Management
 - Energy Modeling
 - Carbon Modeling
 - Solar Modeling
 - Life-Cycle Cost Analysis
 - Benchmarking Analysis
 - Workshop Facilitation
 - Feasibility Assessment
 - Document Review
 - Specification Assistance
 - Policy Development
 - LEED Certification Submittals
 - Team and public education
 - Sustainability research
 - Microclimate analysis
-



RESEARCH

Davis Langdon's Research group was created to collect and disseminate information on the construction market, including in-depth reporting on market escalation and on factors driving material and overall project costs. As market leaders in research, research management and innovation, we provide you with cutting edge knowledge on the latest trends in construction and we provide our internal consulting teams with an invaluable resource for the best intelligence on market conditions.

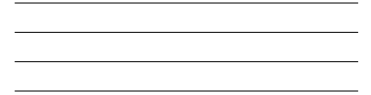
Our team has experience in evaluating the impact of various economic and operational scenarios in global and local construction, and in producing general to specific reports on key market trends.

Our key Research services include:

- Quarterly market research reporting - Identifying leading economic indicators affecting construction markets, providing both a national and regional overview of construction cost drivers, as well as an overview of factors which are expected to impact costs in the future.
 - Cost escalation projections - Identification of market expectations, likely escalation scenarios and risk to assist project teams in planning for, and managing escalation.
 - Benchmarking analysis – Assisting in developing construction cost databases for historical costs as well as data collected from projects still in the planning phases.
 - Sector and product specific studies – Analyses for specific sectors or products, focusing on trends in escalation and material costs.
 - Economic assessments and modeling – Preparing analyses of area economic conditions and their impact on construction market factors such as cost, labor and material availability; providing energy and life cycle cost models.
 - Labor force assessments – Conducting location-specific surveys, including interviews with key contractors and subcontractors to assess likely levels of engagement, projected work volume in the region, and expected costs and availability of labor.
 - Customized studies to support our clients' information needs.
-



Higher Education



Universities and colleges face many challenges in an intensely competitive climate. As pressures on capital spends intensify, the delivery of an increasingly wide range of courses, together with the competing requirements of teaching, research and capital funding streams, results in complex building project requirements. The search for cost effective solutions should be thorough and the financial management of the resulting building project must be rigorous.

Trust and understanding

At Davis Langdon we believe that trusted relationships are the key to successful higher education building programs. We work with a wide range of institutions and we endeavour to understand their individual ethos, needs and priorities. Particular emphasis is placed on understanding the usage of the building, and the associated technical requirements. We appreciate that governance is often complex and we help our higher education clients to balance the expectations of finance committees, faculties, research departments and students.

Empowering and inspiring

Clients can expect an experienced and proactive approach from Davis Langdon. We provide a full range of construction consulting services, tailored to meet each university's individual challenges. Our skills have been developed during our 20 years' experience in this market, underpinned by our research and benchmarking data collection and interpretation processes. We offer a balanced insight into value and risk drivers across a broad range of procurement mechanisms. We actively collaborate with university clients to develop campus sustainability plans, setting standards for all future buildings: we explore what can be realistically achieved, maximizing limited budgets.

We can also help our clients to identify and control their operating costs, as well as their capital costs. Our experience in writing innovative new policy operations and maintenance programs has helped many university clients to maximize value and efficiency in these areas.

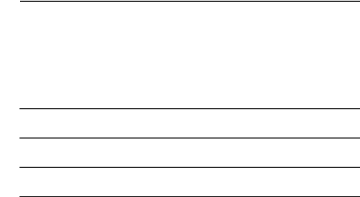
This is an important and dynamic area for Davis Langdon. Universities have the opportunity to empower and inspire so many – a challenge we uphold and are eager to share. At the heart of our service is the complex and rapidly changing interaction of quality and quantity, time and cost – helping our university clients achieve the best building for the budget.

University Of California

The University of California (UC) is a public university system in the state of California, with a combined student body of over 220,000. Its first campus, Berkeley, was founded in 1868, while its tenth and newest campus, Merced, opened in 2005 - the nation's first public research university to be built in the 21st century and the first new UC campus in 40 years. Davis Langdon has worked on more than 1200 projects on all ten UC campuses. Building types include science and research laboratories, medical facilities academic space, performing arts, libraries, athletic facilities, housing and dining facilities, and building infrastructure elements.

The university is constantly competing for funds and these fiscal pressures mean that robust cost information is vital. Furthermore, competing priorities such as expansion needs, upgrade and maintenance efforts and sustainability compound this challenge. To assist UC in managing these hurdles, Davis Langdon provided two main types of construction consulting services: cost planning for individual projects, and system-wide research and planning. We also provided sustainability consulting to meet the present and future demands of the campuses. Our long-established knowledge of their governance processes and methodologies enables us to apply a range of skills and services to help meet their capital program goals, as well as the employment of UC's policy for all new projects to be LEED Silver equivalent.

Davis Langdon's expert consultation resulted in the success of the cost management processes established by the UC Office of the President, by establishing a consistent format for all submissions from the campuses, including protocols for handling contingencies and escalation. Our research team assisted UC in developing a construction cost database for historical costs and data collected for future projects. These efforts produced the basis for recommendations to the Board of Regents that focused on improving project development procedures within the system.



Services include:

- Cost management*
- Cost management systems design
 - Development of budget cost models
 - On-going cost management and cost control
 - Strategic cost advice

- Research*
- Benchmarking analysis
 - Escalation analysis
 - Systematic storage and management of cost data
 - Market review analysis

- Sustainability*
- LEED project management
 - Life cycle cost analysis

- Value & Risk*
- Facilitation of value engineering workshops

Select projects:

- Mondavi Center for the Arts, UC Davis (*pictured*)
106,370 GSF
- Cal Stadium, UC Berkeley
280,000 SF addition
- Replacement Hospital, UC Irvine
423,000 GSF
- Kolligian Library and Information Technology Center, UC Merced
179,000 GSF
- East Campus Arroyo Student Housing, UC Riverside
212,200 GSF
- Cancer Center, UC San Diego
324,000 GSF
- Ronald Reagan Medical Center, UC Los Angeles
1,000,000 GSF
- Genentech Hall, UC San Francisco - Mission Bay
429,755 GSF
- Bren Hall, UC Santa Barbara (LEED Platinum)
113,000 GSF
- Biomedical Science Facility, UC Santa Cruz
92,300 GSF

Washington State University

Since opening its doors in 1892 as the Washington Agricultural College and School of Science, Washington State University (WSU) has become a nationally recognized research university with more than 25,000 students worldwide. The flagship campus in Pullman is located on the eastern border of the state in the Palouse region, with regional campuses in Vancouver, Spokane and Richland, Washington.

WSU relies largely on state funding to meet its capital construction needs, and acquiring the best value and functionality are therefore prime considerations. Davis Langdon has worked with the WSU Capital Planning and Development department for several years. Our initial role was assisting the department in evaluating several projects already in design, in order to establish fit within the existing budgets. We have subsequently provided design evaluation, benchmarking studies, facilitation of strategies to realign budgets with expectations, and advice on procurement and risk.

WSU has a very decisive approach to its capital projects and appreciates independent cost advice. We establish close relationships with WSU's project managers at the earliest stages of projects, providing expert advice at critical decision points. This creates an environment where we can challenge assumptions by both the designers and construction managers, allowing options and alternatives to be considered at the appropriate time. Rapid evaluation of these options guarantees that design schedule and decision process are not impaired, and that WSU is proceeding with the best and most accurate information possible.



Services include:

Cost management

- On-going cost management and cost control
- Development of budget cost models
- Procurement strategies
- Peer review and reconciliation of cost estimates by construction manager and contractors

Research

- Benchmarking analysis
- Escalation analysis
- Market review analysis

Value & Risk

- Identify and report on high level risks
- Identify detailed risk exposure and advise on mitigation
- Rescue and peer review function for projects requiring extra input
- Risk strategies during bid process

Select projects:

Compton Union Building Renovation, Pullman Campus *(pictured)*
233,000 GSF

Riverpoint Nursing Building, Spokane Campus
87,516 GSF

Martin Stadium Expansion, Pullman Campus
72,000 GSF

Applied Technology Building, Vancouver Campus
56,000 GSF

Washington Technology Center, Vancouver Campus
14,000 GSF

Agricultural Research & Technology Building, Mount Vernon Campus
20,000 GSF

Biotechnology / Life Sciences Facility, Pullman Campus,
130,000 GSF

Yale University

Founded in 1701, Yale is a private university in New Haven, Connecticut, comprising Yale College (the undergraduate program), the Graduate School of Arts and Sciences and 13 professional schools, with a student community of 11,250. The central campus covers 310 acres, stretching from the School of Nursing in downtown New Haven to the residential neighborhoods around the Divinity School. Yale is presently in the midst of the largest investment in its facilities since the 1930s. A new School of Art complex has opened, and new science and environmental laboratories, as well as a new athletic center and student residence, have been built. There have been major renovations of historic academic buildings and the undergraduate residential colleges.

Davis Langdon works directly with the University, providing cost consulting and research services to help advance their strategic capital program objectives. Through a collaborative engagement with the University and their design teams, we help navigate a clear, cost-based dialogue. We have developed a sound understanding of the potential funding streams for Yale's capital programs, and we provide thorough cost information to aid the decision-making process and achieve best value. Yale's built environment decisions must typically satisfy a range of stakeholders, and we focus on proactive advice that helps balance their needs.



Services include:

Project Delivery Planning

- Comparative analysis of project delivery issues, including fast-track design and construction
- Establish processes and procurement methods
- Schedule project timelines

Cost management

- Cost planning
- On-going cost management and cost control
- Strategic cost advice

Research

- Benchmarking analysis
- Construction cost escalation study

Value & Risk

- Risk contingency assessments

Select projects:

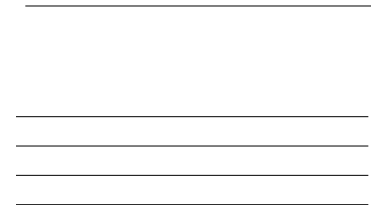
Yale School of Management
(pictured)
230,000 GSF

Yale-New Haven Hospital Facility
Master Plan

University Of Washington

Founded in 1861, the University of Washington is one of the oldest state-supported universities on the West Coast. As a top research institution, the University of Washington has a significant impact on the Washington state economy and successfully attracts federal and private research funds. With its flagship campus in Seattle and satellite sites in Tacoma and Bothell, the university's capital projects continue to provide modern facilities for world-class research and teaching.

Since 1994, Davis Langdon has worked on over 30 major construction projects across all University of Washington campuses. Building types have included a wide range of new construction, renovation and upgrade projects within the health sciences and academic campuses. Through these experiences, we have developed an intimate knowledge of the University's design methodologies, and the campus team's project management approach. Their intensive analysis of functionality, supported by rigorous governance procedures, sets the standard for new buildings. We match the University's own distinctive analytical approach and support their technical decisions with services designed to help them meet their goals.



Services include:

Cost management

- Development of budget cost models
- On-going cost management and cost control
- Procurement strategies
- Reconciliation of cost estimates with contractors and construction managers

Research

- Benchmarking analysis

Sustainability

- LEED project management
- Life cycle cost analysis

Select projects:

Intramural Activities Building
87,500 GSF

William H. Foege Genome Sciences and Bioengineering Building (*pictured*)
132,655 GSF

Michael G. Foster School of Business
133,329 SF

Molecular Engineering Interdisciplinary Academic Building
160,000 GSF

ICA Master Plan

Educational Outreach Building
69,000 GSF

University of Virginia

Founded by Thomas Jefferson in 1819, the University of Virginia (UVA) is a public research university with a current enrollment figure of 21,000. The University, which supports research and scholarship in many fields, is made up of twelve schools in Charlottesville, plus the College at Wise in southwest Virginia. The main University Grounds cover 1,300 acres on the western edge of the Virginia Piedmont. UVA is widely recognized as an architectural landmark and popular tourist destination.

Since 2003 Davis Langdon has provided cost management and sustainability services to UVA on a wide variety of projects, tailoring each service to meet the specific goals of the building or sustainability program. We first began providing cost management services on behalf of various design teams for individual buildings. Our role with the University has evolved greatly, and Davis Langdon works directly with UVA as sustainable design consultants.

As the campus progresses towards their objective of creating the ideal academic environment, renewed investment in new buildings and in a larger sustainability plan are being established. A new emphasis on student experience and increased support for the school's science and technology program drives this movement. New academic buildings incorporating state of the art technologies promote these ends, and a commitment to being a sustainable campus greatly influences the design of these buildings. As a result, Davis Langdon has contributed its services not only in cost management and LEED project management for individual projects, but also in the development of UVA's overall campus sustainability plan.



Services include:

Cost management

- Development of budget cost models
- On-going cost management and cost control
- Strategic cost advice

Research

- Sustainability research support

Sustainability

- Development of policy, standards and benchmarks
- Development of metrics and strategy
- LEED project management
- Life cycle cost analysis
- Energy modeling

Select projects:

Bavaro Education Building
(LEED Silver)
66,000 GSF

Medical Education Building
(LEED Silver)
(pictured)
67,800 GSF

South Lawn, College of Arts
and Sciences (LEED Silver)
114,000 GSF

Emily Couric Clinical
Cancer Center
150,000 GSF

Physical and Life Sciences
Building (LEED Silver)
103,000 GSF

School of Medicine -
Ivy Foundation Translational
Research Building (LEED Silver)
108,000 GSF

University of Southern California

Established in 1880, the University of Southern California (USC) is one of the world's premier private research universities. The university takes a leading role in the Southern California economy and is the largest private employer in the city of Los Angeles. USC's primary campus is the 226-acre University Park location downtown that is home to the College of Letters, Arts and Sciences, the Graduate School, and most of USC's professional schools. A few miles to the northeast is the 61-acre Health Sciences campus. As USC continues its growth and expansion, it seeks to reinvest in facilities that support world class teaching and research. Building programs are influenced by the university's densely urban site, where land usage must be maximized and the logistical works are constrained due to the confined site.

Davis Langdon has worked with USC since 1989, on over 80 completed projects including research buildings, student housing, sports and recreational facilities, libraries, teaching facilities and administration buildings. We have provided a wide range of cost management services, from concept cost models for early planning studies to design phase and construction estimates.

Our ongoing relationship with the university has enabled us to develop a long-term planning approach, maximizing value on each building project. We have used our knowledge of the capital cost issues inherent in the higher education sector to provide strategic advice to USC, helping them to consider upcoming trends, plan future budgets and select the most suitable procurement routes.



Services include

- Cost management*
- Development of conceptual cost models
 - Ongoing cost management and cost control
 - Procurement strategies
 - Replacement building cost proposals
 - Strategic cost advice

Research

- Benchmarking analysis

Select projects:

Galen Center Arena
(pictured)
241,000 GSF

Leavey Library
86,500 GSF

Broad Institute for Integrative
Biology & Stem Cell Research
237,000 GSF

Dana & David Dornsife Cogni-
tive Neuroscience Imaging Center
5,520 GSF

Internationally Themed
Residential College
134,000 GSF

New Campus Center
200,000 GSF

California Institute of Technology

The California Institute of Technology (Caltech) is an independent, privately supported university, situated in Pasadena, California. Caltech has been a presence in the Pasadena community since 1891 and remains at the pinnacle of scientific and engineering research and education.

The 1930s master plan has evolved over the decades, resulting in a wide variety of building types and functions on the 124-acre campus. An active capital construction program provides for the future growth of Caltech's academic divisions, while maintaining an appropriate interface with the surrounding residential neighborhoods. Davis Langdon has worked closely with Caltech since 1993, initially as sub-consultants to design firms, helping to create a smooth interface between the Institute and their chosen design firms. We paid close attention to Caltech's day-to-day project needs, responding in an 'on-call' manner. As a result, our knowledge and our holistic focus upon the client and campus has become the hallmark of our work here.

An in-depth understanding of campus issues has evolved and we have become very familiar with campus design standards and how projects relate to one another. We have brought a consistent cost management approach to a diverse range of building types and functions, enabling considerable economies of scale and more efficient long-term budgetary planning. Caltech was an early adopter of sustainable building principles, a natural progression from its environmental science research and academic focus. Maximizing on the insights we have gained in partnering with Caltech in the past, we have become integral in the development of its sustainable policy guidelines, and continue to be an influential voice as Caltech progresses towards creating a sustainable future for its campus.



Services include:

Cost management

- Development of budget cost models
- On-going cost management and cost control
- Procurement strategies
- Reconciliation of cost estimates with contractor
- Strategic cost advice

Research

- Benchmarking analysis
- Escalation analysis
- Market review analysis
- Economic assessment
- Advice on local trades/rates

Sustainability

- Development of policy, standards and benchmarks
- Development of metrics and strategy
- LEED project management
- Life cycle cost analysis
- Energy modeling

Value & Risk

- Value engineering and risk analysis

Select projects:

Annenberg Center for Information Sciences and Technology, (LEED Gold)
59,000 GSF

Cahill Center for Astrophysics, (LEED Gold)
(pictured)
114,000 GSF

Linde + Robinson Laboratory (LEED Platinum)
45,000 GSF

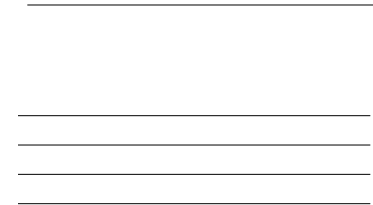
Guggenheim Aeronautical Laboratory
16,000 GSF

Campus Center (LEED Gold)
3710,000 GSF

Warren and Katherine Schlinger Laboratory for Chemistry and Chemical Engineering (LEED Gold)
60,000 GSF

Partnering with Design Teams: Davis Langdon has worked on projects for number of the country's most notable universities. The success of these projects are often the result of our trusted working relationships with many of the world's leading design firms, where we have provided a full range of cost management and cost control services, including advising on construction costs and overall project costs, establishing project budgets, providing estimates of probable construction cost throughout all design phases, and performing value engineering and benchmarking analysis.

Below are some examples of our partnerships with design firms for higher education institutions.



Harvard University – Allston Science Complex

The new four-building Allston Science Complex is the first project in the creation of a new interdisciplinary, academic environment in Allston. This 1,176,469 GSF facility will house the Harvard Stem Cell Institute and a number of other cross-departmental science initiatives. Additional program areas include an auditorium, multi-purpose room, vivarium and power plant. Retail space and a cafeteria will be open to the public. The complex reflects Harvard's commitment to sustainability and is designed by Stefan Behnisch, a world leader in sustainable building design.

Davis Langdon provided cost consulting services on behalf of the design firm, working in close co-operation with both the designer and the University. In coordination with the architect, we provided full design phase cost management, beginning with the conceptual stage through design development. We developed a cost model from initial design concepts and program information, integrating the structural and mechanical/electrical cost elements, which is a critical part in properly estimating for this technologically advanced building. All later cost estimates were compared to this cost model as part of the cost management and control process.

Select Projects at Harvard University

- Northwest Labs, Faculty of Arts & Sciences
- Fogg Art Museum Renovation and Addition
- Massachusetts Hall Renovations
- Sackler Museum Media/Slide Library Renovations
- Harvard Pub / Loker Commons
- Northwest Corner Student Center, Harvard Law School



Columbia University - Manhattanville in West Harlem Development

This development will allow Columbia University to build a new 17-acre academic mixed-use program over a 25-year period, comprised of approximately 4.8 million gross square feet located above-grade and 2.0 million gross square feet located below-grade. Program areas will include research and other academic facilities, recreation facilities, housing for faculty and graduate students, and active ground floor uses such as retail shops and restaurants. The below-grade component will consist of support facilities including central energy plants, shared academic research support facilities, parking and central loading facilities, storage space, and recreational facilities.

In order to provide appropriate cost estimates to a project of this scale, Davis Langdon and the design team worked closely in the earliest possible phase to develop a cost model. We are providing design stage cost management from conceptual phase through to construction documents, and are currently working on the conceptual design phase, preparing the cost model from initial design concepts and program information. This model will serve as the basis for all later cost estimates as part of the cost management and control process.

Select Projects at Columbia University

- John Jay Hall
- Bakers Field Sports Center
- Medical Center Renovations

Princeton University - Center for Creative and Performing Arts

For the past three years, Davis Langdon has worked directly with the University or on behalf of various design teams providing design approach cost opinions for conceptual building projects and LEED advice. Among those projects is the Center for Creative and Performing Arts building. This new performing arts and arts education center will comprise a building for the Program in Theater and Dance, the Department of Music, the Lewis Center for the Arts, and the Society of Fellows in the Creative and Performing Arts. Encompassing approximately 135,000 gross square feet, the preliminary plans include a black box theatre, a large dance studio, an orchestral rehearsal studio, several acting studios, dance studios, music practice rooms, classrooms, support spaces, a café and offices.

Davis Langdon provided cost consulting services from the conceptual design phase to construction. With the preparation of a cost model from initial design concepts and program information, we were able to provide appropriate cost projections from the onset. Additionally, we performed Life Cycle Analysis, escalation and market analysis to benchmark associated costs, allowing the team to manage and control costs throughout the life of the project. Davis Langdon delivered on-going value management services throughout the design phase; ensuring optimal design solutions were being implemented at all stages.

Select Projects at Princeton University

- University Health Center
 - Neighborhood Design Project
-

University of Pennsylvania - Museum of Archaeology & Anthropology

Founded in 1887, Penn Museum has conducted more than 400 archaeological and anthropological expeditions around the world. This is a research institute as well as a museum, with an active exhibition schedule, a membership program, educational programming for children and adults, and a large resource archive. During the museum's long history, many additions have been made to the building.

Davis Langdon is working with the design team to develop a comprehensive master plan that re-considers the museum's space in light of current and future objectives. The plan aims to upgrade the museum's complex historical building, blending old and new, and ensuring that its world-class exhibit, research, conservation and education programs are supported by 21st century facilities. Part of our role is to facilitate prioritization of a wide and often conflicting range of aspirations. We use our experience to create meaningful cost data flow and to inform the decision making process, aligning program and cost management and achieving best value for the museum.



Select Projects at University of Pennsylvania:

- School of Medicine Research Building
- College House at Hill Square
- College Hall West Wing Renovation
- Center for Design
- Franklin Field Weight Training Facility
- Krishna P Singh Center Nanoscale Research Facility
- Palestra Green
- Cam West Tower Expansion & Fit Out

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