

The University of Texas at Austin School of Architecture  
**Information Technology Vision Plan AY 2008-2009**

**Summary of Requests:**

<b>Cyclical Replacement of Computer Lab Equipment (recurring)</b>	<b>\$50,000</b>
Four year cyclic replacement cost for workstations and peripherals.	
<b>Software Acquisition &amp; Licensing (recurring)</b>	<b>\$40,000</b>
Cost of annual site/floating license purchases, renewals, and upgrades.	
<b>Network Infrastructure (recurring)</b>	<b>\$20,000</b>
Cost of maintenance and cyclic upgrade of networks.	
<b>IO Staff (recurring)</b>	<b>\$21,000</b>
A portion of the cost of Graduate Assistants to operate the Computer Lab and IO Central.	
<b>Equipment Maintenance (recurring)</b>	<b>\$9,000</b>
Cost of maintenance & service contracts on key equipment.	
<b>Operating Systems Programming Support (new recurring)</b>	<b>\$30,000</b>
A portion of the cost of creating and maintaining a new IT Staff position.	
<b>Digital Fabrication – Phase IV (project)</b>	<b>\$40,000</b>
Upgrade new 3-axis CNC router to 4-axis operation. Acquire two new small laser cutters to replace our existing large laser cutter. Acquire ZCorp 3D printer for our digital fabrication lab.	
<b>Computer Lab Furniture – Phase II (project)</b>	<b>\$20,000</b>
Acquire new rolling pneumatic workstation chairs for our public access spaces in our computer lab.	
<b>Classroom, Review, and Studio Presentation Systems – Phase II (project)</b>	<b>\$40,000</b>
Upgrade Jessen Auditorium to the standard UT console system. Install high resolution digital projectors in teaching spaces.	
<b>Advanced Visualization and Digital Review Space Project (project)</b>	<b>\$20,000</b>
Purchase hardware for creation of immersive and large format architectural, landscape, and urban design visualization and presentation spaces.	

<b>Recurring Subtotal</b>	<b>\$140,000</b>
<b>New Recurring Subtotal</b>	<b>\$30,000</b>
<b>Project Subtotal</b>	<b>\$120,000</b>
<b>Total ITAC Funding Request:</b>	<b>\$290,000</b>

## **Overview of Current IT Programs & Infrastructure**

### **Mission Statement**

The Office of Information Technology is tasked with the provision and management of all information technology resources for the students, faculty, and staff of the School of Architecture. It is our mission to provide secure, reliable, and relevant technologies to support the educational, academic, and service mission of the School.

### **Computer Lab**

The School of Architecture Computer Lab, located in Sutton Hall 1.102, provides dedicated computational, input, and output resources to all students enrolled in classes within the School. There are over eighty workstations, flatbed scanners, a 42" wide large format scanner, and 3 teaching zones with digital projectors. The computer lab is open from 8am to 11pm Monday through Thursday, from 8am to 6pm on Fridays, from 10am to 8pm on Saturdays, and from 10am to 11pm on Sundays during long semesters.

### **IO Central**

IO Central contains the centralized printing and plotting equipment for the School and equipment checkout (including digital cameras, LCD projectors, and laptops), and provides a central location for students needing IT assistance. The facility adjoins the Computer Lab and has the same hours of operation. It houses a central print server with queues for the various printers and plotters, including eleven plotters, 2 color laser printers, and 2 black and white laser printers.

### **Digital Fabrication**

The School currently hosts four major pieces of technology for digital fabrication: a 3D printer that produces plastic models from digital input, two laser cutters that cut and etch sheet material through a printer-style interface, a CNC router that can cut shapes and route surfaces out of sheet material up to 4" thick using a digital control system, and a 3D non-contact laser scanner that can produce three-dimensional digital models by scanning physical objects.

### **IO Staff**

The Computer Lab and IO Central are staffed by twelve half-time graduate students per long semester. Six of these positions are funded by Teaching Assistantships, while the other six are paid as salaried Graduate Assistants from ITAC and other funds.

### **Design Student Computer Policy**

The School has implemented a student computer policy for all undergraduate and graduate students enrolled in our design degrees: architecture, interior design, and landscape architecture. The students are required to provide a laptop and specific design software. Support of this initiative is provided by requiring extended warranties for hardware issues, leveraging the ITS Helpdesk for general hardware and software issues, and providing application assistance through IO Central.

### **Technology Classrooms**

The School has two auditoria, seven classrooms/seminar rooms, and two studios with installed projection systems. There are also three schedulable teaching spaces in the Computer Lab for direct technology instruction.

**Network Infrastructure**

Goldsmith Hall has up-to-date networking infrastructure, with a Gigabit backbone, Fast Ethernet to the desktop, and a Cat-5e SCS. The West Mall Building and Battle Hall are running Fast Ethernet over a CAT5 cable plant. Sutton Hall has had a partial network upgrade, including a Gigabit backbone, Gigabit service for servers, and Fast Ethernet to select portions of the building; however, it still requires completion of the SCS and additional network equipment to bring it up to standards.

**Server Infrastructure**

The School currently has three Windows 2003 Servers: two newer Dell PowerEdge Servers – one runs our intensive printer and plotter services and the other runs our local network file sharing and software licensing; the third server is running legacy web hosting and ftp services.

**IT Staff****Director of Information Technology**

Responsible for IT vision, management of IT staff, administration of all IT related budgets, network administration, server administration, software licensing and distribution, Computer Lab workstation administration, and computer support.

**Network Analyst**

Faculty and staff computer administration, LAN administration, Computer Lab supply management, security implementation, inventory, Bevo Bucks and print charging administration, and computer support.

**Webmaster**

Design, administration, and content management of the School of Architecture web site.

**Current and Proposed Funding Sources****ITAC**

ITAC is the primary budget used to provide student computing resources. Our current ITAC budget is \$127,586; this is approximately 21% of our total IT budget. Increased special project funding through ITAC has historically been an important method of funding for major technology initiatives and projects.

**SOA Instructional Technology Fee (flat rate allocation)**

This allocation is currently \$120,000, 52% of which is currently dedicated to IT staff salaries. The remainder is used as a supplement to fill the gap between funding resources and funding needs for recurring expenses and projects.

**SOA Special Equipment Account**

A portion of the School of Architecture's annual operating budget is the Special Equipment Account. The annual Special Equipment budget is approximately \$102,000. This account is the primary source of money for faculty and staff computing; it is also used to support our visual resources and shop facilities, and to fund technology programs and projects.

**CLC & FCI Funds**

The School now opts to receive CLC & FCI funding directly into an account. This funding source is very helpful in freeing up Special Equipment Account money for other projects and programs that are of direct benefit to students.

**SOA MO&E**

Currently, \$122,229 (66%) of our IT salaries come from the School's MO&E budget; this represents a very significant investment by the School in Information Technology.

**SOA IT Revolving Account**

All IO Central pay services are charged to students through the BevoBucks system. In addition, faculty and staff may use the input and output devices in this facility if they provide a UT account number. These funds go into the SOA IT Revolving Account and are used to pay for the consumables used in the operation of the Computer Lab and IO Central. Activity on this account is a good metric of the volume of services provided to our students; even with our minimal cost-recovery pricing, we expect that this year's revenue will be around \$80,000, almost 15% of our operating budget.

**Differential Tuition**

The School continues to pursue increased funding through increasing our differential tuition. Only a portion of last year's requested increase was granted, and increased funding for information technology is high on next year's list of anticipated recipients of increases from this source.

**Best Practices****Server Consolidation**

We are committed to running as few servers as possible to provide the services necessary to run our local operation. We currently have one file sharing and licensing server, one print server, and a legacy internet information server.

**Web Based Calendaring and Reservation System**

Our recent investment in web development is eliminating paper waste and improving the efficiency and availability of our facilities and equipment by providing enhanced EID based access to room and resource scheduling.

**ITS Service Hosting**

We are using ITS to host our web services, enterprise email services, and some other select data storage. Doing so allows us to have a higher level of security, reliability, and availability for our mission-critical data processes, without having to make large local investments.

**The Boutique Model**

We are a small School with specialized needs in many areas. Our IT strategy for adapting to this condition is to find ways to leverage the generalizable IT resources and services provided by ITS and others for our 'vanilla' computational support and service needs, while focusing the energy of our IT organization on the specialized and unique 'boutique' needs of our user community.

**Design Student Computer Policy**

By initiating a required student laptop and software policy for our design students, our most intense computer users, we have been able to significantly reduce the amount by which our IT budgets are overtaxed and to simultaneously provide a distributed computing environment.

**Use of Previous Academic Year Allocations**

*Funds listed below as expended were expended in total across all IT accounts and do not represent only ITAC expenditures.*

**Recurring Expenses**

**Cyclical Replacement of Computer Lab Equipment**

(AY 2007-08) Actual Expenditure \$32,000

**Software Acquisition & Licensing**

(AY 2007-08) Actual Expenditure \$30,000

**Network Infrastructure**

(AY 2007-08) Actual Expenditure \$15,000

**IO Staff**

(AY 2007-08) Planned Expenditure \$145,000

**IO Checkout Equipment**

(AY 2007-08) Actual Expenditure \$6,000

**Equipment Maintenance**

(AY 2007-08) Actual Expenditure \$9,000

**Project Expenses**

**Digital Fabrication (CNC Router)**

(AY 2007-08) Actual Expenditure \$25,000

**Digital Fabrication (Laser Cutter)**

(AY 2006-07) Actual Expenditure \$25,000

**Computer Lab Furniture**

(AY 2007-08) Actual Expenditure \$15,000

**Classroom & Review Presentation Systems**

(AY 2007-08) Actual Expenditure \$25,000

**Large Format Scanning**

(AY 2007-08) Actual Expenditure \$15,000

**Sutton Hall SCS Upgrade**

(AY 2007-08) Planned Expenditure \$6,000

**Needs and Proposed Use of Funds**

**Recurring**

**Cyclical Replacement of Computer Lab Equipment**

- Windows Workstations – Our pool of instructional PC’s is roughly 80 computers; the current system replacement cost is \$2000 per workstation. Estimated replacement cost for this pool is \$40,000 per annum, on a four-year-cycle.
- Macintosh Workstations – Our pool of instructional Mac’s is roughly 16 computers; the current system replacement cost is \$4000 per workstation. Estimated replacement cost for this pool is \$16,000 per annum, on a four-year-cycle.
- Computer Lab Peripherals – We have three tabloid flatbed scanners, a document scanner, and a 42” large format scanner. Estimated replacement cost for this pool is \$5,000 per annum.
- Checkout Equipment – Our current pool includes 4 digital projectors, 5 laptops, 6 digital cameras, 2 digital video recorders, and 7 handheld GPS computers, to list a few. Estimated replacement cost for this pool is \$8,000 per annum.

<b>Total Estimated Cost</b>	<b>\$69,000</b>
<b>Amount Requested from ITAC</b>	<b>\$50,000</b>

**Software Acquisition and Licensing**

- Autodesk Design Institute, annual site license – SOA portion, \$10,000
- Autodesk 3DS Max & Combustion – annual 10 seat floating license, \$3,000
- ESRI ArcGIS annual site license – SOA portion, \$6,000
- FormZ – annual 25 seat floating license, \$2,000
- Bentley Microstation – annual departmental license, \$2,000
- Adobe – annual maintenance, new products, & renewals, \$10,000
- Misc. Software – energy analysis, CFD, Atlas ti, Quark, Maya, TransCAD, etc. - \$8,000

<b>Total Estimated Cost</b>	<b>\$41,000</b>
<b>Amount Requested from ITAC</b>	<b>\$40,000</b>

**Network Infrastructure**

- Maintenance contract on Cisco Router, \$9,000
- New Cisco Switches, \$15,000
- Network Installation Services, \$4,000

<b>Total Estimated Cost</b>	<b>\$28,000</b>
<b>Amount Requested from ITAC</b>	<b>\$20,000</b>

**IO Staff**

- 6 Teaching Assistants per long semester funded by the teaching budget for \$60,000 annually.
- 6 Graduate Assistants per long semester funded by IT accounts for \$70,000 annually.
- 3 Teaching or Graduate Assistants per summer session for \$15,000.

<b>Total Estimated Cost</b>	<b>\$145,000</b>
<b>Amount Requested from ITAC</b>	<b>\$21,000</b>

**Equipment Maintenance**

- Service contract on 11 HP Plotters, \$5,000
- Service contract on InVision 3si 3D Printer, \$4,000

<b>Total Estimated Cost</b>	<b>\$9,000</b>
<b>Amount Requested from ITAC</b>	<b>\$9,000</b>

**Operating Systems Programming Support (new)**

A portion of the cost of creating and maintaining a new staff position to provide operating system programming, setup, and administration expertise. Without another staff member with this type of expertise we will be unable to continue the process of improving our digital-curricular integration, level of service to students, and the reliability of our technology infrastructure. Our current understaffing is our most prominent roadblock to innovation.

<b>Estimated Cost for Operating Systems Specialist (FTE)</b>	<b>\$55,000</b>
<b>Amount Requested from ITAC</b>	<b>\$30,000</b>

**Projects**

**Digital Fabrication – Phase III**

The positive impact of obtaining and utilizing these tools upon recruiting, teaching, learning, innovation, and leadership would be difficult to overstate. We need these technologies to move fully into the information age in our teaching and research.

- Universal Laser Systems – X660-60 18"x32" Laser Cutter, \$25,000
- Z-Corporation ZPrinter 310+ 3D Printer, \$27,000
- 4-axis upgrade for ShopBot CNC Router, \$5,000
- Estimated installation and facilities modification costs, \$5,000

<b>Total Estimated Cost</b>	<b>\$62,000</b>
<b>Amount Requested from ITAC</b>	<b>\$40,000</b>

**Computer Lab Furniture**

We are over halfway through our renovation of the Computer Lab. New paint and partitions are 80% complete; we were able to leverage existing desks and augment them with desks from surplus. We have already purchased new chairs for half of the computer lab and would like to complete the order in 2008.

- 80 ergonomic workstation chairs, \$300 each

<b>Total Estimated Cost</b>	<b>\$24,000</b>
<b>Amount Requested from ITAC</b>	<b>\$20,000</b>

**Classroom and Review Presentation Systems**

Keeping our teaching facilities technologically up to date is critical to the success of our educational mission. Jessen is our largest auditorium, where our outreach courses are taught. Its renovation would impact the greatest number of students. New projectors are also needed in many of our teaching spaces.

- Upgrade Jessen Auditorium to the full UT classroom console setup, \$25,000
- Install new projectors in 10 additional teaching and review spaces, \$30,000.

<b>Total Estimated Cost</b>	<b>\$55,000</b>
<b>Amount Requested from ITAC</b>	<b>\$40,000</b>

**Advanced Visualization and Digital Review Space Project**

We are currently in negotiations with TACC to receive 10 rear projection screens and 10 high resolution digital projectors from the decommissioning of the ACES Vislab. We believe that this donation will enable us to fast-track our long-term project plans for creating immersive and large scale visualization facilities within the School. The project funds are for the necessary construction and adaptation of these donations to our existing spaces and for the purchase of high performance workstations to run visualizations on multiple displays.

<b>Total Estimated Cost</b>	<b>\$25,000</b>
<b>Amount Requested from ITAC</b>	<b>\$20,000</b>

## Innovation Highlights

### Render Farm and Rendering Training

One of the key areas that we are seeking to improve in the School is the students' ability to render visualizations of their design work. We are seeking to do this by setting up a network render server and by scripting all Computer Lab, faculty, and administrative workstations to join the render farm when they are in a logged out condition. In addition, we will need to provide training and tutorials to students to help them use the network rendering farm efficiently and effectively. We have been planning and researching this implementation for almost two years. In order to implement the system we need the additional staffing proposed

### Advanced Visualization and Digital Review Space Project

Our production and review processes are still heavily dependent upon paper and physical modeling. One key innovation that would enable better and faster design development and reduce the environmental impact of our educational process is the development and implementation of digital visualization and review spaces. Our current process uses over one linear mile of plotter paper during the final two weeks of each semester. Most of this paper ends up in a recycling bin or in the landfill. A transition to digital review spaces could dramatically reduce our paper usage and foster the development of highly marketable advanced digital production skills in our graduates.

### Dual Operating Systems in Computer Lab

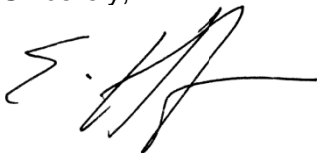
We plan to purchase Mac Pro desktops in the fall to be implemented in one of our computer lab teaching zones. This innovation will allow these computers to be used as either Windows or Mac OS-X workstations, depending upon the needs of the class or upon the needs of individual students when the area is not scheduled for teaching. We believe that this innovation will allow us to better serve both our Mac and PC user populations without physically increasing the number of computers in the lab. However, due to the additional complications involved in disk imaging and configuring multiple operating systems it will be difficult to achieve this objective without the additional staffing requested above.

### Digital Fabrication

With our upgrade of the CNC Router this year, we are finally on par with our peer institutions in terms of our digital fabrication facilities. In order to continue advancing this agenda and to begin taking a leadership role in innovation with these technologies, we will require more staff time for digital fabrication training and consultation. Increased staffing is the key to fostering the innovation potential that is currently underdeveloped in our students and faculty.

Please feel free to contact me if you require any additional information or clarifications. Thank you for your attention to these matters and for your devotion to improving the state of Information Technology at The University of Texas at Austin.

Sincerely,



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