STRATEGIC FACILITIES PLANNING AND CAMPUS MASTER PLANNING

INTRODUCTION TO PROJECT EXPERIENCE

From years of working to provide strategy and program input to architects in their development of master plans, and from our work with public institutions to strengthen long-term capital planning and prioritization, EKA, with Harvey H. Kaiser, has developed a comprehensive capital planning model that inserts technical needs assessments and capital project formation into a larger process that begins with vision/strategy and ends with a financing strategies and a physical master plan. Our view of capital planning—illustrated in the graphic—is that systems thinking is required. Capital planning must be based on comprehensive assessment of needs and prioritization of those needs. But, further, it must be embedded in a broader institutional planning model that begins with strategy and vision and that also includes funding and implementation. Along the way, policy is developed.

EKA also has provided strategic planning, academic planning, and capital needs assessments as sub-consultant to various A/E firms in campus master planning engagements.

As EKA, or via EKA’s sister firm, IDEA Partnerships, LLC, Eva Klein and Bill Morlok have undertaken many Strategic Business Plans for research parks and innovation campuses in which a master plan was developed, with an A/E firm as sub-consultant to EKA or IDEA. (These are described in another section below.)

Examples of capital planning and campus master planning projects follow.
EKA was part of a large master planning team, led by Smith Group/JJR, to provide a Capital Projects Plan and Campus Master Plan for this large, public institution in Greenville, North Carolina.

East Carolina University grew rapidly in the last two decades and expects a high rate of future enrollment growth. The institution offers programs in Arts & Sciences, Business, Education, Human Ecology, Fine Arts and Communications, Health and Human Performance, and it has one of the North Carolina’s two Academic Health Sciences Centers, with Schools of Medicine, Nursing, and Allied Health. A new School of Dentistry was being launched, with a new facility.

The client and Smith Group/JJR decided to adopt EKA’s comprehensive model for capital planning. Accordingly, EKA led efforts to create a Comprehensive Capital Projects Plan that was the basis for the Master Plan. EKA was specifically responsible for several major scope elements:

- **Strategic Review**—compiling, organizing, interpreting all recent trend information and projections for programs, students, research, etc.
- **Space Capacity Analysis**—current and projected to 2025 (based on enrollment, research, and clinical growth assumptions)
- **Building Functionality Assessment**—coordinated with a Condition Audit (ISES), which led to programming several facilities for change of use—and major modernization projects
- **Capital Projects Plan**—integrating and prioritizing all capital needs.
EKA led a team, in partnership with Perkins Eastman, to complete a Strategic Master Plan for this College, which had just recently been approved for a mission change from two-year to baccalaureate by the Board of Regents of the University System of Georgia (USG). USG system staff contacted EKA to request a qualifications submission in a limited solicitation of three firms; the other two were architecture/planning firms. This unusual approach was based on the idea that USG and the College were seeking a different kind of Campus Master Plan—despite the existence of the USG master plan template, which usually is required. In this instance, they wanted a master plan that included a strategic and academic plan component and also a business plan/implementation component. It was USG’s idea that a firm like EKA would be suited to these scope needs.

Due to the longstanding professional relationship of Aaron Schwarz and Eva Klein, EKA asked Perkins Eastman to be its partner and the College and USG were immediately impressed with the range and quality of Perkins Eastman’s master planning work in higher education. The scope of the Strategic Master Plan included: Contexts, Vision/Goals, Programs, Enrollment Plan, Physical Plan, and Implementation Strategies.

The Physical Plan was derived after analysis of the existing campus environment and the condition of facilities and with EKA developing Space Planning Guidelines and performing a Space Capacity Analysis. Guidelines for architectural vocabulary and landscape also were developed, in the demanding context of creating a new “look” for the College that would require effective design concepts but reasonable costs for modifications to its fairly drab 1970s-1980s era buildings.

CCGA is aggressively implementing this Plan. A new Nursing/Science building; a new Student Center; and new student housing already have been completed.
**Strategic Facilities Plan**

**Wellesley College**

EKA, in association with Harvey H. Kaiser Associates and SMMA (Cambridge) was selected to develop a long-range and comprehensive facilities/capital plan for Wellesley College.

The Wellesley campus not only is filled with architecturally significant and extremely expensive older buildings, it also has an historically significant and culturally important landscape setting, parts of which were designed by Frederick Law Olmstead’s firm.

Wellesley had completed numerous planning studies of condition, infrastructure, landscape plans, and other elements of capital needs, but felt that it only had “pieces.” The College found a need to review, compile, organize, and prioritize its entire set of needs into a single long-range, comprehensive capital plan that could be updated and implemented during an approximately 10-year period, or longer.

The EKA-HHK-SMMA team was selected based on Dr. Kaiser’s prior dialogues with Wellesley; our EKA-HHK comprehensive capital planning model; as developed for North Carolina and Massachusetts (even though those were public systems); and the multidisciplinary perspective of the assembled team.

Work began with creation of *Planning and Prioritization Principles*. A qualitative evaluation was done of every campus building and integrated with prior condition data. Also, the team developed *Space Planning Guidelines* for Wellesley and conducted a *Space Capacity Analysis*, using the new *Guidelines*. In order to do the *Analysis*, a new *Space Inventory* was created. A new set of *Current Replacement Values* were developed, along with updates to GSF records and space coding.

In this case, the *Space Planning Guidelines* were applied at the departmental level for office, teaching lab, and research space. Cost estimates for all capital needs were developed.

In the last stage of work, the team assisted Wellesley in prioritization of the capital needs and preparation of presentation materials for the Board of Trustees.
In 1993, EKA was asked by the UNC General Administration to develop a capital funding allocation model for use by the Board of Governors to make intra-system allocations to the 16 constituent institutions of UNC from pools of funds made available by the General Assembly for facilities repairs and renovations.

The NC General Assembly sets aside funds, by formula, for distribution to state agencies specifically for capital renewal. UNC receives a lump-sum allocation and, in turn, allocates funds among the 16 institutions. EKA conducted a national survey of possible models, analyzed the literature on capital renewal funding, and developed an entirely original multivariate formula that uses various campus characteristics and facility condition variables to allocate funds rationally to the institutions. The model also weights the variables and provides a “floor” allocation to any given institution. With the new model, the annual allocation process has gone smoothly with no “political” arguments for more than a decade.

A decade later, in 2004, EKA was asked to conduct a review of the last 10 years of progress and practice in administration of state R&R funds. UNC General Administration requested that EKA return to conduct this analysis, because questions were being raised about the efficacy of the use of the funds. EKA conducted an extensive review of projects, priorities, and funding amounts applied by each of the 16 institutions.

The report provided evaluation conclusions and also addressed state, system, and campus level policy and management findings—with respect to how appropriately and effectively the R&R funding has been applied.
UNC CAPITAL BUDGET PRIORITIZATION MODEL

THE UNIVERSITY OF NORTH CAROLINA BOARD OF GOVERNORS

Following EKA’s completion of the R&R Fund Allocation Model Study (above), UNC then requested that EKA develop a methodology for prioritizing capital project requests from the 16 constituent institutions, for use by the President and Board of Governors to make annual recommendations to the Governor and General Assembly for a unified system-wide list of capital priorities. Harvey H. Kaiser participated in this study.

First, EKA conducted a review of peer states systems, a national literature review, and developed a new model that uses institutional mission, campus characteristics, facility conditions, and other factors, to determine rankings for capital projects submitted by the 16 constituent institutions. This project also included revisions to the processes of capital budget preparation.

This UNC capital project prioritization model has been in use since 1996.

One of the recommendations of this study was that UNC needed to develop Space Planning Standards that would be one additional element of policy, in approval of submitted capital requests from the 16 constituent institutions.

Distribution of Capital Funding by Source for University of North Carolina, 1925 - 1997

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Highlights:
System-wide Project (16 institutions)
Legislative Mandate Response
Capital Planning Policy
In 1997, following EKA’s first two studies—the R&R Allocation Model and the Capital Budget Prioritization Study, UNC again retained EKA (again on a sole source basis), to develop Space Planning Standards, based on a recommendation of the Capital Budget Prioritization Model Study. Dr. Harvey Kaiser also collaborated on this study.

The Space Planning Standards (and utilization guidelines) were to provide guidance for the University of North Carolina in the capital planning process for 16 constituent institutions.

The first phase of the Study, and a major task, was a national survey of all 50 states to obtain current/best practices information on space guidelines, as the basis for development of recommended new UNC Space Planning Standards.

Then, in the next phase, the development of the recommendations, substantial participation of the constituent institutions was accomplished via an Ad Hoc Task Force on Space Planning Standards. The objective throughout was to establish Space Planning Standards that would be useful, simple, and rational, and for which required data exist.

The Space Planning Standards EKA developed were adopted formally and published in the North Carolina Facilities Inventory and Utilization Manual. They continue to serve today as a component in the evaluation that is done by UNC General Administration staff of institutional capital budget requests, prior to submission or proposed projects to the University’s Board of Governors.
Following EKA’s other work relating to capital finance for UNC, EKA was asked to conduct this complex, legislatively-mandated study—to determine whether historical capital funding for the 16 institutions of UNC has been equitable and whether facilities and funding of all campuses was adequate. The legislative mandate included both appropriated and non-appropriated projects—those funded from appropriations or bonds, fee-supported, or from private philanthropy. The study addressed the capital funding decision process, facilities management and operational issues, as well as actual allocations of capital and required development of a 10-Year Capital Plan for each of the 16 UNC constituent universities.

Of the 16 UNC institutions, five are historically black universities (HBUs) and one is the only Native American four-year institution east of the Mississippi. The HBUs had expressed concern about their abilities to develop programs, recruit faculty, and attract students, given the extent and condition of their facilities. The State’s two research universities had facilities concerns relating to their continued service in science and technology and economic development. In addition, there were fast-growth institutions that believed their capital had not kept pace with their growth. All of this was in context of the State’s projections that showed a huge increase in enrollments—equivalent to the enrollment of 4 or 5 campuses—in the coming decade—a prediction which certainly has come true.

In Phase 1, numerous stakeholders were interviewed. Phase 2 included a series of eight analytical issue papers; extensive campus visits and interviews; and an engineering review of condition and functionality deficiencies. In Phase 3, a detailed capital plan was developed for each university and 16 separate reports, Facilities Profile and 10-Year Capital Plan, were prepared and distributed widely. This study also included a complex communications strategy to ensure that members of the General Assembly, Board of Governors, UNC General Administration, constituent institutions, and other stakeholders were kept informed and engaged throughout the study process.

Then, in summer of 2000, EKA provided direct support to the NC General Assembly leadership in achieving bi-cameral and bi-partisan consensus on a $3.1 billion, six-year Bond Program for UNC and the NC Community College System.

In this landmark study for UNC, EKA created its first version of its comprehensive approach to capital needs assessment and capital plan development and prioritization.
MATCHING FACILITIES TO MISSION: STRATEGIC CAPITAL PROGRAM FOR MASSACHUSETTS STATE AND COMMUNITY COLLEGES

BOARD OF HIGHER EDUCATION, COMMONWEALTH OF MASSACHUSETTS

EKA was selected in an extensive national competition to develop a Strategic Capital Program for 24 state, specialized, and community colleges in this public higher education system. (The study excluded the University of Massachusetts’ five campuses.)

This study’s comprehensive needs assessment and capital prioritization methodologies were directly derived from the prior UNC studies. EKA’s 12-person study team, which included Symmes Maini McKee Architects and Entech Engineering, as well as Dr. Harvey Kaiser, conducted a comprehensive analysis of capital needs in four categories—Capacity; Condition/Quality, Infrastructure and General Campus Features, and Special Purpose Facilities.

In this case, as the Board of Higher Education (now Department of Higher Education) did not have enrollment projections, to conduct the Space Capacity Analysis, EKA also created an Enrollment Analysis Study, projecting enrollments for the System and each of its 24 colleges for 10 years. EKA also created Space Planning Guidelines for the Space Capacity Analysis—as well as Facility Quality Criteria for the qualitative facilities review (all facilities; all campuses). Entech customized its FM-Assistant software, to accommodate data from analyses other than the Condition data.

Following the detailed analyses, the team prepared a comprehensive Strategic Capital Program for each institution. These were reviewed and refined with the colleges. Then, EKA developed a prioritized System-wide Strategic Capital Program, based on a set of newly developed principles for prioritization.

This year-long plus effort was intended to position the System for preparation of a bond bill that would secure authorizations of capital funding for a decade or more. In addition, it created new planning and management tools for ongoing use in capital planning and prioritization, and instituted new policy, for example, in focusing on modernization of existing assets, rather than on new facilities. Since the study, the Governor has used its findings to support bond program commitments for capital projects for Massachusetts institutions.
The University of New Mexico (UNM) consists of a Main Campus and Health Sciences Campus in Albuquerque and four branch campuses throughout the State. Reflecting its special heritage, much of the Main Campus is built in a unique neo-pueblo architectural style. As with other institutions, the University has aging facilities and difficulty in prioritizing scarce capital funds.

Following adoption of a new Strategic Plan, the University determined that it wished to develop a detailed strategic plan for facilities. EKA was selected for this work largely due to our innovative work in comprehensive capital planning in North Carolina and Massachusetts. EKA conducted this work with Harvey H. Kaiser and Entech Engineering as sub-consultants. There were three phases:

In Phase 1, EKA worked with focus groups and a Strategic Facilities Planning Committee including the Provost and Vice Presidents to develop a Strategic Facilities Plan. The Strategic Facilities Plan was intended to completely change the University’s processes to plan, prioritize, develop, and manage its physical assets. The first phase of work involved development of a vision statement and goals for the physical environment. Also, the EKA team developed Space Planning Standards (for analysis of capacity and for ongoing space management); baseline Facility Quality Criteria, for use in assessing qualitative facility needs (existing facilities), and new policies for Space Planning and Management.

EKA was engaged in a second phase of work, to assess the University’s four facilities databases and develop conceptual recommendations for future facilities database development.

In the third phase of work, EKA conducted the Space Capacity Analysis—based on the new Space Planning Standards. First, a UNM team worked for several months to update and audit its facilities Space Inventory, to ensure proper measurement and coding of space. EKA developed the analysis methodology and the Space Capacity Analysis, with recommendations for ongoing space assignment and management.
For the Board of Regents of Louisiana, EKA conducted a study of *Capital Financing Alternatives* for the State’s four higher education systems.

Louisiana historically has funded capital projects in higher education (and other state agencies) from the proceeds of general obligation bonds. In the mid-2000s, as the State had many competing needs, higher education was unable to access sufficient capital to address accumulated capital renewal needs and research expansion at LSU at Baton Rouge and elsewhere, along with building of three new community college campuses, growth of the two health sciences centers, and other special purpose facilities.

With Lehman Brothers as subcontractor, EKA conducted a three-part study:

- A survey of capital financing for higher education in other states
- An evaluation of Louisiana’s current and traditional practices for capital financing
- Development of alternatives for future capital financing and development.
During the mid-1980s, when she was employed in the Higher Education Consulting Group of KPMG Peat Marwick (NYC), Ms. Klein participated in development of master plans for five colleges of The City University of New York (CUNY), including Baruch College, Hostos Community College, Kingsborough Community College, Medgar Evers Community College, and the College of Staten Island. In all these master plan studies, KPMG was under subcontract to various architecture/master planning firms and Ms. Klein was the Senior Consultant.

Ms. Klein determined the academic and administrative space requirements for these master plans. The studies involved extensive interviewing and analysis of academic programs and administrative services. She interpreted CUNY space planning guidelines for various categories of space, including office, classroom, science laboratory, language laboratory, library, learning support laboratory, auxiliary, theater, gymnasium, conference, and other special facilities. Then-current academic programs, student enrollment projections, and other future plans were used to project space needs by category.
BOARD OF TRUSTEES RETREAT—CAPITAL PLAN

FAYETTEVILLE STATE UNIVERSITY
EKA conducted a one day Board of Trustees Retreat for this university, to review a presentation of a draft Campus Master Plan (Clark Nexsen and Sasaki Associates, Inc.). Ms. Klein was invited by the University chancellor, to help trustees understand the proposed Master Plan in context of the Capital Equity/Adequacy Study and Ten-Year Capital Plan for Fayetteville State and emerging state space planning guidelines, increased emphasis on major renovations, and findings on capital equity. Ms. Klein returned to FSU for a follow up meeting with the Board of Trustees.

FINANCING ALTERNATIVES—GREEK HOUSING

THE UNIVERSITY OF VIRGINIA
EKA advised the University and its Fraternity Alumni Council, which represents independent fraternity and sorority corporations, on financing alternatives for major renovations to student housing owned by the corporations. Working with the University, investment bankers, tax consultants, and bond attorneys, EKA refined a University-developed plan for combining a taxable bond issue with a fundraising program to create an endowed fund to make loans for major maintenance. EKA served as facilitator in decision meetings.

CAPITAL FINANCING ALTERNATIVES STUDY AND FINANCIAL ADVISOR

VIRGINIA TECH UNIVERSITY
While she was at KPMG Peat Marwick, in the late 1980s, Ms. Klein managed a study to identify capital financing alternatives for a wide range of building and equipment acquisition projects. The initial stages of work involved extensive research on potential financing approaches, including tax-exempt status and other legal issues in the Commonwealth of Virginia. Ms. Klein was the only consultant from the firm’s Higher Education Consulting practice, working with a partner and managers from the Tax Department.

The report detailed financing alternatives for different types of projects.

Subsequently, Ms. Klein worked with the University’s financial advisory firm for selection of an underwriter for a $14 million bond issue.

SEMINAR ON CAPITAL PLANNING

THE UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
At the request of the University, EKA planned and conducted a seminar on Capital Planning for a UIUC audience. Ideas were developed for UIUC, based on the UNC case study and EKA’s presentation on planning approaches.

PLANNING MEETING FACILITATOR FOR FACILITY CONDITION AUDIT

ENTECH ENGINEERING AND ARCHITECT OF THE CAPITOL
At the request of Entech Engineering, Eva Klein served as facilitator of initial meetings for this review of condition needs of the facilities in the federal jurisdictions reporting to the Architect of the Capitol.

The outcome of this session was agreement to many process elements and assumptions that would guide how Entech would carry out this major assessment of condition deficiencies and renewal needs of the Capitol district facilities.