This is an overview of selected developments and field experience in 1999-2000. Topics include: corporate real estate as a factor of production, not just a cost to be minimized; the role of portfolio management in linking corporate real estate to core business decisions; coping when the organization chart becomes out of date in today’s rapidly changing environment; information management and data base needs; prioritization of projects for maintenance, repair and alterations; and other current trends.

**Real Estate as a *Factor of Production*, not just a cost to be minimized**

At the start of the Corporate Real Estate Portfolio Management Alliance project in the fall of 1998, the proposed objective was to ascertain what benefits could be gained by applying the practices of managing a portfolio of financial properties to the management of a portfolio of real properties.

It was then recognized that managing a portfolio of facilities is clearly different from managing financial instruments, such as bonds, equities or mortgages. Financial instruments can be bought and sold in moments for their market value, taking into account their current and future yields, their risk, and the prospects for change in their market price. Real property is much less liquid, and subject to its own set of market cycles. Even so, the CRE Alliance hoped to identify ways to manage corporate real property to substantially enhance corporate financial value.

During the course of the CRE Alliance project, the consensus shifted from that financial starting point. The CRE Alliance recognized that Corporate Real Estate Assets and other workplaces are usually far more important for their effect on the ability of the enterprise to accomplish its mission, and to its consequent profitability, than for their market or financial value. In its findings, the CRE Alliance gave primacy to valuing real property assets primarily as *factors of production*, analogous to machine tools, delivery trucks, and computers. They are all part of the infrastructure of the enterprise. This principle holds true, whether the property is owned, leased, or occupied under some other form of tenure.

In doing so, the CRE Alliance recognized that for an enterprise, the primary measure of value of a workplace is its functionality. Whether it be private sector or public, an enterprise uses facilities to conduct its business: to provide workplaces for its staff, to provide places to meet its customers, to manufacture its products, and for a range of other business purposes. (The term *enterprise* is used to include private sector corporations, public corporations such as post offices, and government departments and agencies.)

**Portfolio Management as a link to the core business decisions**

Portfolio Management is the link in the value chain between real estate and facility operations and core business decisions, values and finances of an enterprise. Portfolio Management decides what workplaces should be in the portfolio, and what projects are needed to get the right mix in the right places. Projects may be to dispose of property or to acquire it; to build, buy or rent; or to finance or rehabilitate it.

The CRE Alliance defined Portfolio Management as follows:
“Managing real properties as a group in order to achieve greater corporate benefits from them as
— productive working environment assets,
— financial assets, and
— strategic assets,
above the benefits derived from managing them individually.”

A corporate view of Portfolio Management, Asset Management, and subordinate operating functions is
diagrammed in Figure 1. This is reprinted from the Executive Report of the CRE Portfolio Management Alliance Research
Project.3

In this diagram, portfolio managers provide infrastructure to support organizational strategy. They give financial
direction to asset managers who are in charge of major individual facilities and clusters of facilities. Facility management
is seen as one of the technical operating functions that support portfolio and asset managers. This diagram presents the
perspective, in the spring of 1999, of some unusually thoughtful, forward-thinking, high-ranked real estate executives.

![Diagram of Corporate Real Estate Portfolio Management]

**Figure 1. A corporate view of Portfolio Management, Asset Management, and subordinate operating functions**

### A demand-based view of corporate real estate

The diagram in Figure 1, however, does not show graphically that corporate real estate exists to support the overall
enterprise. That is diagrammed in Figure 2. The crosshatched area at the left represents the broad range of enterprise-wide
functions, whether the enterprise be a manufacturer of widgets, an accounting firm, a software developer or a government
department.

Portfolio Managers take into account *the anticipated needs for workplaces* for the core functions and
infrastructure support, and the *corporate financial strategy of the enterprise*. They then direct what existing facilities are
to be retained by asset managers, and at what levels of functional capability. They also identify projects that must be
delivered to maintain the inventory in balance with demand, and what repair and alterations (R&A) should be funded.

When a reliable basis for demand projections is not available to the multi-year horizons of real estate construction
or leasing, portfolio managers rely on a range of forecasting methods to manage the risks associated with workplace
provision. The portfolio manager may even create *straw-case scenarios* for the enterprise, and test them for plausibility
with occupant managers, as a basis for demand projections.
Breaking down the silos to predict Workplace Demand

The main functions or “content” of each of the boxes in Figure 2 are listed in Figure 3. It diagrams where the authority to make strategic decisions about a portfolio of corporate real property is usually best situated, and about the follow-on decision flows to implement the strategy.

Figure 3 starts at the left with Workplace Demand, likely derived from scenarios by the core business units of the enterprise. What is the range of likely futures for which workplaces will be required, to a horizon of three or five years, and for the longer term? What levels of service and functionality in workplaces will be required at various levels of corporate achievement, for each of the main core business units. In some organizations, a set of several scenarios are updated for each annual budget cycle, and also when abrupt major changes occur in the environment external to the enterprise, such as a market crash or a political upheaval in a key market area. Estimates of probability or risk are attributed to each scenario. For e-businesses, when the planning horizon is shrinking to very few months, some say even weeks, strategies for change and agility are even more relevant.

As Martha O’Mara points out in her book, Strategy and Place, the wise workplace provider will respond with an appropriate portfolio strategy, such as incremental change to the portfolio under conditions of high uncertainty, or standardization of facilities in an enterprise that is relatively stable, or value-based strategies when change and uncertainty are moderate. Unfortunately for the workplace providers, most organizations, large and small, do not have such scenarios available for the workplace provider. More typical are projections of sales or other volumes for the next year or several years, often with related overall staff sizes, but lacking the information needed to estimate what workplaces, of what general capabilities, will be needed in what locations or regions. Often this information is only available for individual departments or business units, with no overall or coordinated estimates for the enterprise as a whole: managers may describe the enterprise as a set of silos. This is often true even in organizations with relatively stable external environments, and typical in companies undergoing rapid change, such as high-growth technology companies.

In organizations where departments operate in “silo-mode”, with limited coordination and sharing among departments, the facilities group may be better placed to project the overall corporate future than the individual vice presidents. Then, the best understanding of what is likely to happen across the whole organization may be built from a roll-
up of the “guerilla intelligence” available in the real estate and facilities department. In our own experience, a multinational corporation used staffing projections developed by the authors with the facilities team as its hiring plan for the next three years, and another multinational company accepted projections of enhanced sales volumes from its facilities programmers as the rationale for proposed investments, including in more supportive workplaces.

Figure 3. Main Parts of the Corporate Real Estate Organization

Functions of the CRE organization

*Portfolio Management* brings together real estate managers and financial managers to develop the strategy for the real estate portfolio, and related financing. They draw on information about core functions of the enterprise as they manage the real estate strategy for providing physical workplaces for the enterprise, and the financial aspects. Together, the team of portfolio managers takes direction from the business units that will need workplaces, and identifies projects and budgets to meet those needs. Portfolio managers also ensure that the portfolio as a whole meets the current and future needs of the enterprise. This is a crucial part of the value chain in support of the enterprise.
(a) The Demand function ascertains what workplaces will likely be required from the core business units and support units under each of the various scenarios. This includes how much will be needed of each functional category of workplace, to specified time horizons. User requirement profiles can be compared to the capabilities of the inventory in order to identify good fits and problems, as well as gaps, shortfalls and surpluses. In some organizations, an explicit portfolio strategy is prepared for each scenario, as a general overview.

(b) In an ideal world the Financial function would conduct the financial side of real estate transactions, including financing of acquisitions, dispositions, and refinancing, all in close collaboration with the other portfolio management functions.

This is the function that keeps the real estate strategy in line with the financial strategy, for each scenario of the overall enterprise. It determines the target ownership structure for each scenario, such as the proportion of workplaces to be in owned property, or in leased property, or synthetic leasing, or in property in other forms of tenure. This includes planning the migration of the portfolio towards the target under each of the various scenarios, and managing investments and refinancing as necessary. It also may advise on, or directly manage, the financial side of real estate held primarily for investment purposes, rather than as a factor of production.

Some of the managers who come from the real estate industry focus on real estate transactions or deal making; others have a more financial background, and may see their future career path within a finance department. The chief financial officer can expect that the real estate group demonstrate, at strategic and operating levels, that is it spending the right amounts of money in the right places on the right things.

In the real world, Real Estate transactions and financial management are often separate from Portfolio Management and the other Real Estate functions. In some cases, they do not report through the same chain of command. In extreme cases, we have had occasion to hold workshops at which managers for those functions from the same company met each other for the first time at our workshop.

(c) The Budget Cycle Process function, responsible for managing the budget process at each cycle and obtaining fiscal approvals for specific actions, is part of the Required Projects function in some enterprises, while in others it is part of Portfolio Management’s Financial function. In some others it functions separately, and has its own manager or chief. The Budget Cycle Process provides the primary “reality” check. Even in those instances when there is no strategy, there usually is a budget.

It needs an explicit and verifiable process to resolve priorities among competing proposals for projects, to determine which projects will be funded in each budget cycle, including for major capital projects, sub-projects, and smaller line items of repair. Projects are required and launched because of decisions flowing, explicitly or implicitly, from Portfolio Strategies and Initiatives.

(d) The Required Projects function sets up the requirements for each project, to implement the work of Demand, and Financial. For instance, it is responsible for resolving priorities for each project, within the overall project budget.

In many organizations with a strong Portfolio Management function, it defines the scope and recommends the budget for each project, its size, levels of service to be provided, schedule, the specifics of project financing, and so on. It is responsible for project programming or briefing, at least for the project planning stage.

If, however, leadership of the real estate group has a transaction focus, then much or all of the Required Projects function may be part of Project Delivery.

Project Delivery encompasses all activities after a project has been defined and funded. It includes the real estate transactions for acquisition, leasing or other forms of tenure, and dispositions. It covers all the phases of a construction project, including planning, design, and construction, until a facility is occupied, commissioned and evaluated. Typically, it also includes the design programming by the A&E team to confirm the requirements of the owner, and the detailed programming for space planning and final occupancy.

Property Operations and Maintenance (O & M), takes implicit direction from Project Delivery, because once a facility is created, remodeled, altered or refitted, it must then be operated and maintained from that basis until it is
physically changed through another project. Then, throughout the service life of a facility, it is operated and maintained under the direction of Asset Management, which receive direction and funding from the Portfolio Management function. Property Operations and Maintenance issues are often forgotten during Design and Construction, although there is now a growing trend towards Whole Life Cycle Planning and Management.

Asset Management is the function that manages individual asset. Facility by facility, it is responsible for each real property asset, or cluster of assets such as a campus, operating within the framework set by Portfolio Management. It periodically updates the asset management plan for each property used by the enterprise. Each asset manager is the advocate for projects for her or his property, and gives general direction to Property Operations and Maintenance.

**Staffing for decision flows vs. traditional rank and salary**

When executives find that the positions on their traditional organization charts are filled by people not suited for their new and fast-changing job demands, a different kind of chart is needed. The head of real estate may create a diagram like the one in Figure 3, and then map people’s names to the functions on the chart. Of course, the objective is to find the best fit between available managers and the various kinds of real estate decisions (who decides what, and what authorities they need) regardless of rank and salary on the traditional organization chart.

Recently, when a head of real estate responsible for thousands of workplaces mapped his real estate managers to the diagram in Figure 3, he found mostly good fits, but at the same time, the causes of some problems became obvious. On his traditional organization chart, portfolio management was a new function with newly hired, lower ranking staff. Asset managers felt free to ignore policy and strategy guidance from portfolio managers who had lower rank, and therefore lower status. His strongest manager headed the Project Delivery group.

His immediate solution had two parts: (a) move that strong manager up the decision chain to take charge of Required Projects, and (b) recruit a new, senior head of Portfolio Management, to strengthen the link to heads of the operating departments of the overall enterprise, and provide a portfolio-level framework for asset managers.

Diagrams, which focus on the flow of decisions, can be helpful not least because they can be redrawn as needed to keep up with a fast-changing reality, and suggest out-of-the-box solutions that are masked in traditional organization charts.

**Information Infrastructure for a demand-driven CRE**

Figure 4 adds other parties that corporate real estate interacts with. At the top left, the box for External Environment represents the external competitive market environment, with business cycles and legislative changes, fast-changing information technologies, and emerging global pressures. At the bottom, the box for Other Stakeholders and Investors reflects the roles of shareholders, customers, and the general public interests. Figure 4 also includes boxes within the Overall Enterprise at left, to identify components that corporate real estate works with or takes into account.

Figure 4 also adds a crucial element to the middle of Figure 3: the Data Base for Real Estate Management. The decision flows in Figure 3 require a comprehensive database about the portfolio, and about individual assets, to support decision-making. In Figure 4, thin dotted lines make the point that all CRE functions need access to this shared database.

Of course, the data base should include more than the specific data about each real property asset, whether leased or owned, and data about each project under way. It should also include data at the portfolio level, that is, the summary data, or roll-ups, that are created from the raw data and serve as intermediate data tools for portfolio management.

Portfolio Management assembles the roll-up totals and summaries in groupings to compare demand profiles of occupant groups from core business units; inventory of facilities, considered by size, geographic region, functional category, age, tenure (own, lease, etc.); gap analyses for the portfolio between required levels of demand and levels of service provided; values including book, replacement, etc.; risks associated with each facility or group of facilities; serviceability, i.e. capabilities of facilities, whether needed or not at this time, including building condition; priority rankings for projects to maintain serviceability; considerations for tradeoffs on investment; and so on.
Senior real estate managers bring to the enterprise elements of the knowledge base indicated at top of Figure 4, including a current understanding of real estate markets, and innovations in the building industry, and in the technologies used by building occupants. The strategy they develop also takes into account corporate policies, guidelines, standards and benchmarks, both internal and external. However, many others in the corporate real estate group need access to this information. Some organizations report they are finding ways to make it available over secure Intranets, both within the CRE group and to occupants.

Unfortunately, in many large enterprises, this database does not yet exist. Too frequently, data is incomplete, and what should be components of a single comprehensive data system are instead kept in separate data bases, often in formats not compatible with each other. Today, even the very best real estate databases are still inadequate. An analysis by Fransson and Nelson, published in April, 2000,\(^5\) asserts that the level of data integration required for high-level portfolio management decisions simply does not exist. The authors report on their findings from the Corporate Real Estate Portfolio
Management Alliance, that comprehensive solutions have yet to be created. They compare the situation to that of corporate information systems in general, before the advent of software for Enterprise Resource Planning (ERP).

Corporate data about real estate is typically held across many data silos. There are several software packages that do an excellent job for data users for some parts of day-to-day operations, or for design and construction. There also are a few that are adequate over a somewhat broader range of other tactical information needs, but none that link portfolio issues to asset issues, project issues, and workplace demand as discussed earlier in this paper.

Figure 4 also adds enterprise-wide functions to the diagram. It shows the overall enterprise strategy as not only the driver of enterprise operations, with their resultant scenarios and decisions, but also as a direct decision driver of the overall real estate strategy. The overall enterprise strategy and the overall real estate strategy are mediated by the enterprise’s internal culture and practices, and by the strategic environment and culture external to the enterprise. Information from other stakeholders and investors is also a resource for the enterprise decision-makers.

Other stakeholders and investors are shown at the bottom of Figure 4. Information about the users of facilities, both occupants and others, including visitors and the general public, and their facility needs, are basic inputs to the managing of enterprise operations, and of course to the enterprise’s information infrastructure.

Figure 4 also lists at the bottom left some other kinds of issues that are, or should be, taken into account when developing and implementing a real estate management strategy. Among the list are sustainability, health, productivity improvements and other benefits of real estate for occupants, customers and others.

**Evaluations: The need for feed-forward**

Not only do most large organizations lack a comprehensive facilities database; they also fail to develop an institutional memory of lessons learned. They are too often dependent on what best practices have been recognized and remembered by individual real estate and facility staff members, and passed on informally to their subordinates and successors.

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**Figure 5. The need to feed-forward lessons learned from each project**

As each facility project is commissioned, whether it is new construction, remodel or refit, both the facility, and the process for executing, it should be evaluated. Each phase of each project should be considered as a potential source of lessons, including programming, design, construction, and commissioning.
Many firms review the project file after completion and note whether the project was completed within budget, and on schedule.

Some firms assess how well each new or remodeled facility meets the need of the business users who occupy it. Customer satisfaction surveys, post-occupancy evaluations, lease audits, and building condition reports, are becoming more common.

Essential knowledge can be captured as a formal institutional memory of what works well, what works best, and what should not be repeated. A new generation of tools is giving Real Estate professionals the means to evaluate the “fit” between facilities and the users they serve. These tools use indicators of capability to assess how well a proposed design, or an occupied facility, meets the functional requirements specified by the business units, and facility occupants. Now that these tools have been accepted as national standards and introduced into ISO, their use is gaining momentum among large organizations.7

Even a small business, with only a few dozen staff, needs to capture and conveniently access the key facts about its workplaces, how they are used, and lessons to apply “next time”.

Wise firms keep the members of their successful project teams working together on successive projects, so that when the balance and chemistry in a team work well, lessons learned are more effectively carried forward from project to project, and teaming skills are enhanced.

Evaluations: Strategic to in-depth

**Figure 6. Levels of information for portfolio and asset management of facilities**
This paper has focused on the Portfolio Management function of corporate real estate. It has emphasized the need for a strategic view as the primary driver for decisions about corporate real estate. In Figure 6, the many types of investigations shown at the bottom of the page provide a foundation of information about individual assets. Rollups for a specific site or complex of facilities are used for building condition audit, or in building labeling programs such as LEED (Leadership in Energy Efficient Design). Portfolio Management operates at the two higher levels, with macro-level scans, not in-depth investigations, and with strategic review of key indicators. In-depth investigations, when required, are usually commissioned by asset managers, as part of the preparation of Asset Management Plans.

End Notes

1. This paper draws in part on research conducted during the Corporate Real Estate Alliance Portfolio Management Research Project, led by The McMahan Group, of San Francisco, from September, 1998 through April, 1999. This research project included the real estate organizations of firms and government with some of the largest market values today, including computer software and hardware giants, high-tech manufacturing, investment management, communications companies, insurance and financial institutions.

The project was sponsored by the corporate real estate organizations of BellSouth Telecommunications, Inc., Boeing Realty Corporation, Fidelity Investments, Florida Power & Light, Microsoft Corporation, Pacific Gas & Electric Co., State Farm Insurance Co., Sun Microsystems Inc., US General Services Administration, US West, Inc., and Washington Mutual, Inc. The researcher members of the Alliance included: Tom Bomba, Andrew Light and Sven Pole of The McMahan Group; John McMahan of both the McMahan Group and the Fisher Center for Real Estate at the University of California, Berkeley; Wade Fransson of CB Richard Ellis, with David Nelson; Martha A. O’Mara of the Harvard Graduate School of Design; Françoise Szigeti and Gerald Davis of the International Centre for Facilities; Barry Varcoe of Johnson Controls, Inc.; Kevin Deeble of TriNet Corporate Realty Trust; Joseph Gyourko and Yonheng Deng of Zell/Lurie Real Estate Centre at the Wharton School.


3. Figure 1 was published in the executive summary from the CRE Alliance Project. The work to develop Figures 2, 3 and 4, presented here, was done from April, 1999 to June, 2000 as part of continuing development undertaken by the International Centre for Facilities (ICF). These diagrams have been tested in discussions and presentations to a number of other major public and private organizations. For instance, the authors are working (spring and summer, 2000) with the Real Estate Division of a large corporation with thousands of employees and over 100 sites. To better respond to changes in overall corporate direction, the head of that Real Estate Division has now directly mapped his organization onto the diagram in Figure 3 and has identified present and prospective managers for each of the functions.


5. Fransson, Wade and David Nelson, Management information systems for corporate real estate, in Journal of Corporate Real Estate, Vol. 2, No. 2, pp. 154-169. ISSN 1463-001X.

6. Other efforts to deal with the “total” or “whole” picture include: The Whole Building Design Guide of the U.S. National Institute of Building Sciences (NIBS), the activities of the Facility Information Council (FIC) of NIBS, the Whole Life Cost Forum of the Building Research Establishment in England (BRE UK), and activities in the International Standards Organization, such as in ISO Technical Committee 59, Subcommittees 2, 3, 13 and 14, in the American Society for Testing and Materials (ASTM) Subcommittees E06.80 and E06.25, and in the International Council for Building Research Studies and Documentation (CIB) Working Commissions 60 and 102.