Courthouse planning and design have been transformed since World War II, driven by population and caseload growth and by increasing suburbanization toward single-minded efficiency with little regard for the symbolic importance of the courthouse in community life. Civic banality has often been the outcome.
Two major phenomena over the last 15 years have begun to radically impact this late twentieth-century trend in courthouse architecture: 1) renewed focus on courthouse design led by the federal design excellence program\(^1\) and 2) increased emphasis in both the private and public sectors on sustainability driven by rising energy costs, greater certainty about climate change, and improving data on the impact of architecture and indoor environmental quality on occupant performance.

## THE COURTHOUSE SQUARE

Prior to World War II, United States courthouse architecture was modeled on the early circuit or district courthouses that occupied the town square or center of small communities. William Faulkner, in *Requiem for a Nun*, paints a landscape of the courthouse at the heartland of America:

> … but above all, the courthouse: the center, the focus, the hub; sitting looming in the center of the county’s circumference like a single cloud in its ring of horizon, laying out its vast shadow to the uttermost rim of horizon; musing, brooding, symbolic and ponderable, tall as cloud, solid as rock, dominating all: protector of the weak, judiciate and curb of the passions and lusts, repository and guardian of the aspirations and hopes …

The courthouse in the square\(^2\) is uniquely American. The shadow of the courthouse across the community is a reflection of the obelisk, the statue in the ancient square. Open gathering spaces in the center of towns can be found both in classical antiquity, as the Roman ‘agora,’ and throughout Europe dating back to medieval times, as Italian piazzas and Spanish plazas. In “The Central Courthouse Square in the

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1. Federal design excellence program
2. Courthouse square
American County Seat,” David Price “… traces its [American] roots to early eighteenth century settlements along the east coast …”³ While Price argues that the phenomenon of the courthouse square is concentrated in the Midwest,⁴ states throughout the northeast and mid-Atlantic regions include counties with courthouses in the square.⁵ Over 1,000 courthouse squares were built in counties throughout the United States:⁶

**MODERN COURTHOUSES**

The active courthouse square, as an exterior, green space for community life, is in jeopardy. Due to a variety of factors,⁷ American communities largely abandoned the center of small towns following World War II; automobiles and the suburban lifestyle became dominant by the end of the millennium; and the consolidated and centralized court complex emerged,⁸ driven by population growth and rapid increases in caseloads. James Howard Kunstler, in _The Geography of Nowhere_, is not kind:

> The public realm suffered in another way with the rise of the automobile. Because the highways were gold-plated with our national wealth, all other forms of public building were impoverished. This is the reason why every town hall built after 1950 is a concrete-block shed full of cheap paneling and plastic furniture … why courthouses … and other civic monuments are indistinguishable from bottling plants and cold storage warehouses … bare bones buildings that served their basic functions without symbolically expressing any aspirations or civic virtues.

> Try to imagine a building of any dignity surrounded by six acres of parked cars. The problems are obvious. Obvious solution: Build buildings without dignity.⁹

While the majority of trial courthouses today are still occupied by one- and two-judge courts, the vast majority of judges serve urban and suburban population centers.¹¹ Since World War II, the U.S. population has increased by more than 70 percent and become more than 80

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**Map of Courthouse Squares**
Edward T. Price, used by permission of the Geographical Review
Increasing population and density have resulted in massive increases in court caseloads and a nationwide trend to consolidate and centralize courts and courthouse operations.

In smaller counties, with a one- or two-judge courthouse, population growth is often driven by exurban development from urban centers. When the need for a larger courthouse is inescapable, historic preservation laws often prohibit expansion of existing
courthouses. Local communities favor locations outside of town where available land allows ease of vehicular access and dedicated parking. Once a consolidated courthouse is built, an urban or suburban court is reluctant to distribute services out to the community. Bureaucratic and staffing efficiency have been the drivers.

**FEDERAL DESIGN EXCELLENCE PROGRAM — U.S. GENERAL SERVICES ADMINISTRATION**

Federal courthouse architecture, before and since the inception of the federal design excellence program in 1994, has had a profound impact on U.S. architecture and has provoked a national conversation about architectural style in the civic realm. The U.S. General Services Administration (GSA) first assumed responsibility for federal construction in 1959. In 1961, John F. Kennedy created the Ad Hoc Committee on Federal Office Space. The committee issued in 1962 “Guiding Principles for Federal Architecture,” which encouraged the “finest contemporary American architectural thought” for the design of new federal buildings.

A notable early federal courthouse designed by a famous architect is the federal courthouse in Chicago, designed by Ludwig Mies van der Rohe and completed in 1964. Mies’ international-style architecture was groundbreaking in the 1960s, and his designs are revered. But the similarity of the courthouse to Mies’ design for the Seagram’s building in New York City and its placement in the urban setting were overtly intended to express the pure functionality of structure and to strip the building of ornament and expressions of style.

While commissions were awarded to top architects, the number and quality of commissions substantially increased, and creativity and good design were actively fostered by the design excellence program after 1994. The first courthouse designed under the auspices of the design excellence program was the Boston Federal Courthouse by Henry Cobb at Pei Cobb Fried, completed in 1996.

The General Services Administration (GSA) competitive selection process includes peer review and commissions awarded to the best
designs and designers with few stylistic mandates. Recent changes in leadership and philosophy have placed a new emphasis on design regionalism. The U.S. GSA Design Excellence Mandate includes three Guiding Principles for Federal Architecture:

1. The policy shall be to provide requisite and adequate facilities in an architectural style and form which is distinguished and which will reflect the dignity, enterprise, vigor, and stability of the American National Government. Major emphasis should be placed on the choice of designs that embody the finest contemporary American architectural thought. Specific attention should be paid to the possibilities of incorporating into such designs qualities which reflect the regional architectural traditions of that part of the nation in which buildings are located.

2. The development of an official style must be avoided. Design must flow from the architectural profession to the Government, and not vice versa. The Government should be willing to pay some additional cost to avoid excessive uniformity in design of Federal buildings.

3. The choice and development of the building site should be considered the first step of the design process. This choice should be made in cooperation with local agencies. Special attention should be paid to the general ensemble of streets and public places of which Federal buildings will form a part.

The quality and standards of federal courthouse architecture have had an enormous impact on state and county courthouses in larger jurisdictions, primarily because the architects who are winning large county courthouse commissions have had considerable federal courthouse experience.

A challenge in federal courthouse design is the jurisdictional separation between local, civic planning and federal autonomy on new federal projects. A typical GSA design excellence process begins with a feasibility study and often with site selection assisted by a planner prior to the design process.

ENVIRONMENTAL SUSTAINABILITY
AND COURTHOUSES

The second phenomenon greatly impacting courthouse architecture today is the green movement. This movement has affected the building industry through the adoption of stringent energy codes in some states, such as California, and through the increasing adoption by owners of the national LEED (leadership in energy and environmental design) program operated by the U.S. Green Building Council. Achieving a LEED rating has also been made mandatory by a number of agencies, including the GSA, in a number of states and in an increasing number of cities, including Washington, D.C., and Boston, Massachusetts. Other cities, such as New York, have made a rating mandatory for city-financed buildings while cities like Chicago provide expedited permitting for LEED buildings.

Recent examples of federal buildings and courthouses certified or registered for certification under the LEED program, or that meet sustainability guidelines, include:

- *Alfred A. Arraj U.S. Courthouse in Denver (cert. 2002) — HOK
Sustainable Sites

This category of points aims to reduce the effect that the project has on the site. The overarching sustainability concern is for the appropriate use of land and the maintenance of resources integral to that land. Points are available for avoiding erosion and controlling rainwater runoff, for example by minimizing impermeable surfaces; maintaining and adding green space or public park; building within urban areas close to public transport; encouraging bicycle use and carpooling; and minimizing urban heat build up through reflective surfaces and green space.

Some of these measures are in direct accord with the role of the courthouse. As the courthouse is a public building, it should be accessible to all, which implies that it should be reachable using public transit. Similarly, the traditional American courthouse typology of a building in a green square would comply with the idea of maximizing green space and public access, and this also works with the need for security — the green space can be used to keep cars — and car bombs — away from the building itself. The rating system also encourages building in urban centers, which is also consonant with the idea that courthouses should have civic presence.

Water Efficiency

Throughout the United States it is common practice to take drinking-quality water from the municipal water supply for all uses within the building, even those that do not need potable water. This category of points looks at ways to reduce potable water use through actual water use reductions and by substitution of rainwater and grey water for drinking water wherever appropriate.

The climate of the United States ranges from dry desert — as in the Southwest — to hot and humid — as in Florida — to temperate rain forest — as in the Pacific Northwest. The best way to reduce municipal potable water use depends on the local rainfall frequency and amount, the state of the local aquifer (if this is used as a water source), and the availability of local supply and sewage infrastructure.

There are many technical solutions available, from waterless urinals and reduced-flow fixtures, through rainwater collection to the use of living machines and on-site sewage treatment. All systems other than on-site sewage treatment are within the scope of typical building budgets. The appropriate solution will be driven by local conditions more than by the courthouse program.

Energy and Atmosphere

One of the major impacts of buildings is the amount of energy they consume. Approximately 40 percent of energy in the United States is used within buildings. Energy use affects both the natural environment and the operating costs of the building. It is becoming a particularly strong focus in measuring sustainability since the Intergovernmental Panel on Climate Change report of February 2007, which reinforced the previous conclusions that anthropomorphic climate change is taking place, largely through the emission of carbon dioxide. Carbon dioxide is emitted whenever fossil fuel is burned, whether this is for direct heating at a building or at a power station where electricity is generated.

Major energy uses within buildings are lighting, heating, cooling, and equipment use. The heating and cooling energy typically includes
the energy used both in the generation of heating and cooling and in
the distribution of the heating and cooling around the building.

Building and system designs can reduce building energy use
enormously through use of daylight, natural ventilation, thermal mass,
solar shading, super-insulation, automatic controls, alternative energy
sources, and system selection. The most appropriate solution will
depend on the climate and the nature of the interior space.

Of course, strategies such as natural ventilation, as used in the
federal building in San Francisco, or evaporative cooling, as used in
the Sandra Day O’Connor courthouse in Phoenix, are not appropriate
everywhere, all the time. Similarly, super-insulation of the façade will
be very beneficial in Minnesota but not so effective in Los Angeles.

However, façades should always be designed to minimize the
heating and cooling loads inside the buildings and to maximize the
available daylight. The best façade design will depend both on the
type of interior space and the climate. For example, the energy use
of a judge’s chamber, which has a relatively low internal cooling load,
will generally be dominated by lighting and heating loads and would
therefore benefit from a well-insulated façade with generous windows.
Such lightly occupied spaces will also be good candidates for natural
ventilation and personal thermal control. Conversely, the energy use of
a courtroom, which is densely occupied, will be dominated by lighting
and cooling loads, and it will therefore likely benefit from daylight and
a well-designed underfloor air system. It is unlikely to benefit from
individual occupant control, although it should be controlled separately
from other courtrooms so that it does not have to be heated or cooled
when it is empty.

This type of façade design will have two main effects — it will
minimize the energy required to run the building when it is occupied
and will also minimize the energy required to bring the building back
to temperature after the weekend or in the morning. This start-up
energy can be a significant proportion of the energy use. It will also
allow the building to remain more comfortable in the event of a power
outage or during a utility peak load management period.26

Beyond the design of the building and the systems, there is one
further measure that can be taken to minimize the energy use of the
courthouse. It is likely that there will be spaces within the building such
as lobbies that are used only for short periods of time. These spaces
can be designed to have less stringent temperature and humidity
requirements than the courtrooms and offices. This strategy was used
in the main entrance hall at the Sandra Day O’Connor building. It is
also possible to reduce energy use by raising the thermostat settings
during the summer and lowering them during winter, although
this requires training of the occupants. The effectiveness of this
strategy will depend on the climate as well as on occupant tolerance
and motivation.

Materials and Resources

This category of points seeks to minimize the environmental
impact of buildings through reducing the amount of new material
required to build them, reducing the distance that the material
travels, and encouraging the proper disposal of waste, preferably
through recycling.

The strategies used here do not differ between courthouses and
other building types and are generally available within most building
budgets. Some of the points, particularly those related to construction waste management, are becoming common practice in some markets and can even offer a cost reduction.

**Indoor Environmental Quality**

This set of points is focused on improving the productivity and health of the occupants and installers through the use of materials that do not off-gas formaldehyde and other volatile organic compounds and through the improvement of visual and thermal comfort for all of the occupants.

The strategies for avoiding materials that off-gas are not different between courthouses and other building types and are well-established and available within most building budgets.

The other major component of this category concerns daylight and views for all of the regular occupants of the building. Providing daylight and exterior views has two benefits to the building. First, it is likely to lead to an energy use reduction when coupled with lighting controls that turn off electric lights when there is sufficient daylight. Secondly, there is a strong and proven link between productivity, stress management, and the availability of views, especially scenes including nature. This second benefit may be very important in a courthouse where many of the occupants are in high-stress situations.

**Innovation in Design**

This category of points is open for suggestions from design teams. For a courthouse, one possibility might be design to improve the acoustical performance of the spaces. This is a facet of improved environmental control.

### LEED COURTHOUSES

Two projects, illustrating LEED standards, are highlighted below: Alfred A. Arraj U.S. Courthouse in Denver, Colorado, and the Wayne L. Morse U.S. Courthouse in Eugene, Oregon. The focus of the two case studies is on innovation, especially regarding regional climates and court functionality.

**ALFRED A. ARRAJ U.S. COURTHOUSE**

Silver LEED Certification

**LOCATION:** 901 19th Street, Denver, Colorado

**SIZE:** Two-story pavilion + 10-story tower + penthouse for 318,850 gross square feet

**NUMBER OF COURTROOMS:** Four magistrate courtrooms + 10 district courtrooms

**CLIENT:** U.S. General Services Administration, U.S. District Court for the District of Colorado

**ARCHITECTS:** Helmuth, Obata + Kassabaum Anderson Mason Dale Architects

**STRUCTURAL ENGINEERS:** Martin/Martin Inc.

**MECHANICAL AND ELECTRICAL ENGINEERS:** The RMH Group Inc.

**ENERGY ENGINEERING:** Architectural Energy Corporation

**Sustainable Site**

The courthouse is oriented toward the southeast on the site; the landscaped plaza intentionally references the courthouse square. The plaza includes a water feature and uses local stone for paving and hardy regional plants that are drought-tolerant and low maintenance.

**Energy and Atmosphere**

The Arraj Courthouse is the first federal courthouse to incorporate solar electricity, in the form of photovoltaic panels on the roof. The solar panels provide 2-3 percent of the building’s electrical load but are primarily designed to reduce peak load demands. Primary building systems, in combination with supplemental energy systems, are designed to perform 46 percent better than the Code of Federal Regulations energy baseline, substantially reducing energy costs. The use of electric chillers for air conditioning is reduced by evaporative cooling, and variable speed fans and pumps also reduce energy usage.

The courtrooms and offices employ a low volume, underfloor air system to balance temperature and air distribution throughout the space. Only occupied areas are required to be within narrow temperature ranges. The underfloor system also allows layout flexibility in office spaces and is extremely quiet.

Triple-glazed windows are used along the south-facing corridors, reducing heating and cooling loads. Sunlight is also controlled through fluted and partially screened glass. Interior energy usage is minimized through the use of electronic dimming ballasts for fluorescent lighting, occupancy sensors, and lower level ambient lighting where feasible. An automated building control system balances outside climate and inside occupancy to achieve constant performance in the top 20 percent range.

**Materials and Resources**

The building design uses — to the greatest extent possible — local, durable materials, recycled content, and certified woods from sustainably managed forests. The stone pavers and precast concrete in the façade are locally produced. Paints and adhesives are low in

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*Alfred A. Arraj Federal Courthouse
HOK, used by permission of General Services Administration*
volatile organic compounds and are water-based. The paneling in the courtrooms is certified maple, and the courtroom floors are cork, a renewable resource.

**Indoor Environmental Quality**

The public corridors in the courthouse are oriented to the southeast with large windows to maximize sunlight and enhance views of downtown Denver. Light shelves and light-colored surfaces reflect daylight into interior office and public spaces. The courtrooms are designed with clerestory, fluted glass panels with automated shades that the judge or staff can use to allow, diffuse, or block daylight. Natural light reaches 75 percent of the building.

**Innovation in Design**

Many of the sustainability components designed into the Arraj courthouse, especially for courtroom spaces, are highly innovative and are being emulated in other courthouses throughout the country.

**WAYNE L. MORSE U.S. COURTHOUSE**

Silver LEED Application

LOCATION: 1000 Mission Street, San Francisco, California

SIZE: 270,000 gross square feet

NUMBER OF COURTROOMS: Six district courtrooms

CLIENT: U.S. General Services Administration

ARCHITECTS: Morphosis DLR Group

STRUCTURAL ENGINEERS: KPFF Consulting Engineers

MECHANICAL AND ELECTRICAL ENGINEERS: DLR Group, Glumac

ENERGY ENGINEERING: Glumac

**Sustainable Site**

"After initial site investigations it became clear that the form language should be directed at breaking down the scale of the building so that it could not be mistaken for a generic office structure. The breakdown of the building into two major parts also served to imbue it with a specific character, while allowing it to function as scalar connective tissue with the surrounding urban fabric. Furthermore, it was important that the building be a cultural focal point. Historically, the courthouse, along with the town hall, formed the core of small town America. This building is designed to attract people by its vitality, its beauty, and its complexity." (Pritzker Prize)31

**Energy and Atmosphere**

The courthouse utilizes "fan-wall" technology or smaller, quieter air handlers and automated controls to reduce energy usage more than 38 percent below ASHRAE Standard 90.1. The mechanical design utilizes an underfloor air distribution system for courtrooms and most occupied spaces. The lobbies and public spaces are cooled and heated by radiant slabs and displacement ventilation. Hot water is heated by the heat transmitted from the 24/7 server rooms.

**Indoor Environmental Quality**

The cost of floor-to-floor curtainwall glass, especially in public spaces to increase the amount of daylight, was offset by energy incentives provided by the local utility board. The designers determined that the additional daylight would substantially reduce the cost of electricity to light occupied rooms.

The radiant floor system in public spaces increases comfort to the occupants. In the winter, the heat is emitted from the floor, which is often the coolest area of a room. In the summer, condensation from radiant cooling in the floor is controlled by humidity sensors.

**CIVITAS**

The courthouses illustrated above have advanced courthouse design by beginning to reconnect our public spaces with their environment and with the emerging civic values of sustainability and conservation. Thomas Phifer, project lead for the Sandra Day O’Connor U.S. Courthouse, told the *New York Times*, “We took a look around and found that no one was occupying public space in Phoenix. No one was outdoors. No one was even under a tree … We felt we needed to make an offering to the city in the way of a significant urban room, a shaded space where people could come as a respite."

The offering of public space to the city, though, faces challenges. A court and a courthouse lobby today are difficult to describe as universal, public spaces. Public courthouses are often high-security zones. A member of the public who is not a member of the media or who does not have a specific court case or matter to which they must
The history of courthouse squares in the northeast is replete with fires.4 The United States General Services Administration (GSA) design excellence program, begun in 1994, stresses creativity and eschews specific stylistic or design parameters. In Chapter 2, Design Excellence Mandate, p. 6, the third guiding principle is, “Special attention should be paid to the general ensemble of streets and public places of which Federal buildings will form a part. Where possible, buildings should be located so as to permit a generous development of landscape.” In Chapter 3, Design Excellence Planning, p. 10, Site Selection, design excellence goals are: “Contribute meaningfully to community development; Maximize the potential for architectural design excellence; Support effective sustainable design strategies; Meet current security standards.”

The typology of the square is most precise. Other American typologies include the commons and the green. The most famous example is the Boston Commons (statehouse adjacent). The American square, unlike most European plazas, is usually green, with formal walkways and shade trees (see illustrations, above).

Price, p. 125. The substance of the argument is that Tennessee, Kentucky, Indiana, Illinois, Iowa, and Missouri, with portions of Northeast Texas and Georgia, have the greatest concentration of courthouse squares.

Examples outside the Midwest include Queen Anne’s County Circuit Courthouse, Centerville, Maryland; and City Hall, Philadelphia. The history of courthouse squares in the northeast is replete with fires. When a courthouse burned to the ground, it was often replaced with a larger version in a less symbolically central location. The recent Morgan County, West Virginia, courthouse fire destroyed a courthouse that was a replacement courthouse for a more traditional version that was destroyed by fire at the turn of the century.

Price. Shaded areas of New England and the West on the map were not studied by the author. Each dot represents a complete or partial courthouse square. Only 25 percent of the counties between New England and the West were studied using Sanborn maps, and 636 courthouse squares were identified. The map is adapted by merging three separate maps and is used by permission of the Geographical Review.

Kunstler, James Howard, The Geography of Nowhere (Simon & Schuster, NY, 1993). These factors are studied extensively in Kunstler’s book, as well as his subsequent Home from Nowhere. They include, but are not limited to, the decline of cities caused in part by skyscraper construction to house poor, Southern minorities who migrated north; a dearth of attention paid to the street-level experience between skyscrapers; increases in crime; the abandonment of the streetcar and the parallel...
growth of the federal highway system; a massive post-war building boom of homes fueled by the G.I. Bill; and the devaluation of the public realm.

8. While limited jurisdiction courts often continue to be dispersed geographically, both general and limited jurisdiction trial courts are driven by the need for bureaucratic efficiency and have been physically altered to accommodate justice and courthouse functions, central booking operations, and in-custody defendant movement and security.


10. Historical Maps of Pennsylvania, Bucks County, Doylestown (Copyright 2006-07, by Harold Cramer), photograph used by permission of the author. (http://www.mapsofpa.com/countyseatsa.htm). “It is really two buildings consisting of a round and rectangular part. Airline pilots viewing it from the air have dubbed it ‘the toilet.'”

11. In Maryland, 68 percent (99 out of 146) of the circuit court judges statewide were from five (out of 24 total) counties with 10 or more judges in 2005. Ninety-one percent (133 out of 146) were from counties with three or more judges.

12. U.S. Census Bureau. 2000 population = 225,981,679; 1940 population = 132,164,569. Urban and suburban are defined by the bureau as metropolitan (80.3 percent in 2000; 56.5 percent in 1940), which can be distinguished from rural or non-metropolitan (19.7 percent in 2000; 43.5 percent in 1940).

13. Examples are numerous and are best illustrated by rapidly growing counties for which the old courthouse has become a small museum across the street or was destroyed by fire long ago, and the most recently built county courthouse is a justice complex with hundreds and sometimes thousands of employees: Orange County, Florida; Montgomery and Prince George’s County, Maryland; and Gwinnett County, Georgia, are a few examples. Monmouth County, New Jersey (illustrated above) has experienced recent growth and is planning on a large expansion of a 1950s courthouse built at the center of a residential green or commons now backed by a vast acreage of parking.

14. This phenomenon is most applicable in counties along the east and west coasts and in the southeast and southwest, located near rapidly expanding cities. Midwestern counties have not experienced these pressures, primarily because the Midwest has been the only region in the United States experiencing population decline over the last 20 years. (U.S. Census Bureau).

15. Gwinnett County, Georgia, is an example of a county government complex that includes the county courts and is sited for ease of access to cars and generous availability of land for parking. It has no apparent planned relationship to the town center, independent of vehicular access.

16. A community court, designed to serve Wards 7 and 8, was begun in 2002 in the Washington, D.C., courts but it was located in the large downtown courthouse. Resources are cited as the reason for not locating the community court in the community.


18. Recent examples of state and county courts emulating or building on the U.S. GSA Design Excellence program include a courthouse design competition in Montgomery County, Maryland, and a recent commission of Leers Weinzapfel for the new Howard County, Maryland, courthouse. Andrea Leers, a Boston architect, has been the designer of several federal courthouses under the GSA design excellence program.

19. Referred to as a Prospectus Development Study (PDS).

20. The U.S. Green Building Council (USGBC) is the nation’s foremost coalition of leaders from every sector of the building industry working to promote buildings that are environmentally responsible, profitable, and healthy places to live and work. The rating system has been developed and is continuously refined via an open, consensus-based process. Refer to www.usgbc.org


22. Other state or county courthouses are undoubtedly on the boards; the list above represents buildings identified as registered or certified by the U.S. Green Building Council. Courthouses may be registered or certified as NC (new construction), EB (existing building), or a number of other certification levels. The Alameda County Juvenile Justice Center, a LEED-certified building completed in 2007, is primarily a corrections facility with some courtroom functions.


25. End Use Consumption by Principal Building Activity, Table 3a. Electricity End Use Consumption by Principal Building Activity, 1999 (Preliminary Estimates), Department of Energy, Energy Information Administration. For electric energy consumption in buildings, cooling consumes 26 percent, lighting 23 percent, office equipment 18 percent, and ventilation 7 percent. (http://www.eia.doe.gov/emeu/cbcs/enduse_consumption/pba.html)

26. These are sometimes referred to as rolling blackouts; it has been used administratively in states such as California to manage peak energy usage.

27. Lazarus, Nicole, commissioned by BioRegional Development Group, Potential for Reducing the Environmental Impact of Construction Materials, Surrey, United Kingdom, January 2005. The strategies that offer obvious financial returns include selling building and site materials, such as brick and soil, for reuse on other sites. While the use of regional materials reduces transportation costs, the financial return on proscribing the geography of a globally competitive marketplace increases in proportion to the cost of energy to transport goods.

28. Hewitt, David; Higgins, Cathy; Heatherly, Pat; and Turner, Cathy, A Market-Friendly Post-Occupancy Evaluation: Building Performance Report, New Buildings Institute, Inc., March 17, 2005. On a three-point scale, where 3 = very important for worker satisfaction: access to windows ranked 3.0; occupant control of lighting and fresh air each ranked 2.9; quality of lighting 2.5; openable windows 2.4; control of temperature 2.4; and ability of occupant to control the amount of fresh air 2.9.

29. The narrative is excerpted from the following monograph: U.S. General Services Administration, "Alfred A. Arraj Courthouse, A Model of Sustainability," September 2005 (produced by the National Renewable Laboratory, Department of Energy).

30. Photo ©Morphosis, by permission.


32. In Gwinnett County, Georgia, the government center provides security for the courthouse wing, but the executive/legislative wing is non-secure. The county is studying the feasibility of building a separate judicial center that will be fully secure and will contain exclusively judicial and related functions. Both the Louisiana 19th and 9th Judicial District Courts in East Baton Rouge and Rapides Parishes, respectively, provide for split security for courthouse functions. The soon-to-be-built East Baton Rouge Parish District courthouse will not include the non-court clerical functions. In Philadelphia, the First Judicial District has explored ways to secure the civil court functions of city hall, a massive building with many public entries.


34. GSA Design Excellence, Chapter 4.1, Criteria 1.