Greening California’s Leased Office Space: Challenges and Opportunities

A Study Conducted by:

A market transformation program

Managed by Navigant Consulting, funded by California utility customers, and administered by Southern California Gas Company under the auspices of the California Public Utilities Commission

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The California Sustainability Alliance (the Alliance) is a market transformation program managed by Navigant Consulting, funded by California utility customers, and administered by Southern California Gas Company under the auspices of the California Public Utilities Commission. The Alliance leverages action on environmental initiatives such as climate, smart growth, renewable energy, waste management, water use efficiency and transportation planning to help the State of California achieve its aggressive energy efficiency goals more effectively and economically. In partnership with public and private organizations throughout California, the Alliance precipitates widespread market transformation by tackling major barriers to sustainability.

An expert group of advisors from both the public and private sectors have joined the Alliance to develop, test and deploy creative strategies to transform sectors with high energy efficiency potential. Initial pilots targeted the greening of local government, commercial office space, new mixed use communities, multi-family housing, and the water and wastewater sectors. The Alliance’s extensive network of environmental sustainability leaders include leading public and private entities and State agencies responsible for implementing California’s landmark environmental initiatives.

The Alliance program is guided by a Steering Committee comprised of leaders in sustainability policy, programs and initiatives:

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Acronyms & Abbreviations

ADA = Americans with Disabilities Act of 1990
Alliance = California Sustainability Alliance
ASHRAE = American Society of Heating, Refrigerating and Air-Conditioning Engineers
CBD = Central Business District
CEC = California Energy Commission
CEESP = California Long-Term Energy Efficiency Strategic Plan
CoStar = CoStar Group, a provider of comprehensive information about the commercial real estate markets in the U.S.
CPUC = California Public Utilities Commission
DGS = California Department of General Services
ft² = square feet
GAT = Governor Schwarzenegger’s Green Action Team
GB Advisory Committee – California Sustainability Alliance’s Green Buildings Advisory Committee
GBAP = Green Building Action Plan developed pursuant to Governor Schwarzenegger’s Executive Order S-20-04 to be implemented by the Green Action Team
GBI = Governor Schwarzenegger’s Green Building Initiative (Executive Order S-20-04, December 14, 2004) that established the State of California’s priority for energy and resource-efficient high performance buildings within its owned and leased portfolio.
HVAC = Heating, Ventilation and Air Conditioning
LEED® = Leadership in Energy and Environmental Design, a registered trademark of the U.S. Green Building Council
LOI = Letter of Intent
NBI = New Buildings Institute
NOI = Net Operating Income
RBA = Rentable building area (includes leased and available; excludes common areas that are used to provide building services and not directly rented)
RFP = Request for Proposals
ROI = Return on Investment
SCSA = California State Consumer and Services Agency
USDOE = U.S. Department of Energy
USEPA = U.S. Environmental Protection Agency
USGBC = U.S. Green Building Council
Glossary

Building Commissioning - A systematic process for confirming optimized operations of building systems in new buildings.

CalGreen - The 2008 California Green Building Standards Code, California Code of Regulations Title 24, Part 11 issued by the California Building Standards Commission that becomes effective on a voluntary basis on August 1, 2009 and is expected to become mandatory in late 2010 or early 2011.

Central Business Districts (CBDs) – Often referred to as “downtown” comprise the geographic area of a city where there is a high level of activity and large concentration of commercial and retail operations. For purposes of the California real estate market, CBDs are also characterized by a large concentration of Class A Buildings.

Class A Buildings - Investment-grade properties built after 1980 and typically greater than 10 stories that command the highest rents or sale prices compared to other buildings in the same market. Such buildings are well located and provide efficient tenant layouts as well as high quality one-of-a-kind floor plans. These buildings contain modern mechanical systems, and have above-average maintenance and management as well as the best quality materials and workmanship in their trim and interior fittings. They are generally the most attractive and eagerly sought by investors willing to pay a premium for quality.

Class B Buildings - Generally realizing lower rents or sale prices compared to Class A properties in the same market. Such buildings offer utilitarian space without special attractions, and have ordinary design, if new or fairly new; good to excellent design if an older non-landmark building. These buildings typically have average to good maintenance, management and tenants. They are less appealing to tenants than Class A properties, and may be deficient in a number of respects including floor size. They lack prestige and must depend chiefly on a lower rental price to attract tenants and investors.

Class C Buildings - Generally no-frills, older buildings that offer basic space and command lower rents or sale prices compared to all other buildings in the same market. Such buildings typically have below-average maintenance and management, and could have mixed or low tenant prestige, inferior elevators, and/or mechanical and electrical systems.

Core and Shell – Structural and shared building elements, such as the design and construction of the structure itself, including materials and layout; the building envelope (windows, doors and insulation); and central systems such as heating, ventilation and air conditioning (HVAC).

ENERGY STAR® - A joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy that provides tools and techniques for benchmarking the energy performance of buildings, equipment and appliances. [http://www.energystar.gov/]

First Costs – The initial cost of purchasing or upgrading an asset.
“Green” – A broad encompassing term used by many people and organizations to generally represent the universe of environmentally preferable choices for a wide variety of applications from development, design and construction methods that are deemed to have fewer environmental impacts than “conventional” approaches, to aggressive climate action strategies intended to significantly reduce air emissions, increase resource efficiency (energy, water and materials), increase use of zero to low emissions products, reduce environmental impacts of operations, etc.

Green Building – The practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building’s life-cycle from siting to design, construction, operation, maintenance, renovation and decommissioning. [http://www.epa.gov/greenbuilding/]

Green Building Value Proposition – The total bundle of net benefits, economic and other, realized through modifying a building design to produce a more environmentally responsible and resource-efficient asset.

Green Leasing – The process of integrating “green” elements (e.g., resource efficient building design, equipment, appliances, materials and operations) into lease negotiations.

Full Service Lease – Lease that includes all operating expenses such as utilities, electricity, janitorial services, taxes and insurance, similar to a gross lease with expense stops.

Gross Lease – Under a gross lease, the tenant pays a fixed amount of rent per month or year, regardless of the landlord’s operating costs, such as maintenance, utilities, taxes and insurance. A "gross lease with expense stops" means that the tenant will contribute additional money if the landlord’s operating costs rise above a certain amount or the “stop” amount. In addition to the stipulated rent schedule in the lease, a tenant is only exposed to future increases in expenses above a base year or expense stop.

Leadership in Energy and Environmental Design (LEED®) - A green building rating system and program developed and managed by the U.S. Green Building Council. [http://www.usgbc.org/]

Life Cycle Costs [and Benefits] – The total discounted cost of owning, operating, maintaining, and disposing of a building or other type of long-lived asset.

Net Lease – Under a net lease, the tenant is obligated to pay rent and is directly responsible for the operating expenses for the building including maintenance, utilities, taxes, insurance and the common areas. When all three of the typical operating expenses - taxes, maintenance and insurance - are passed through to the tenant, the arrangement is known as a "triple net lease." A net lease with caps establishes a ceiling on the amount of such costs

On-Bill Financing – A utility program finances the net costs of energy efficiency improvements and collects loan payments through the monthly utility bill.
**Retro-commissioning** - A systematic process for investigating, analyzing and optimizing the performance of building systems in existing buildings.

**Split Incentives** – A circumstance in which the flow of investments and benefits are not properly rationed among the parties to a transaction, impairing investment decisions.

**Tenant Improvements or “TI”** - Improvements made to leased premises by or for a tenant.

**Title 24** – California Building Standards Code.

**Zero Net Energy** - Zero net purchases of energy, typically achieved by first making a building or system as energy efficient as possible, and then meeting its net energy requirements through self production of energy, usually through a distributed renewable or “clean” (zero emissions) resource.
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EXECUTIVE SUMMARY

Office buildings use about 10% of all energy consumed in the State of California. While this sector has been targeted by state energy efficiency programs for many years, there is still significant untapped potential.

Approximately 90% of California’s commercial office space is leased. Greening leased office space brings a unique set of challenges. Primary barriers include:

1. Lack of cost and benefit alignment for both tenant and owners regarding green investments
2. The additional complexity and time needed to conduct a successful green lease negotiation
3. Lack of standardization and knowledge about green building principles and measures within the leasing industry

The California Public Utilities Commission has adopted very aggressive goals for the commercial buildings sector that anticipate integrating progressively more energy efficiency into new commercial construction at a pace of about 50 to 120 million square feet per year, and “deep” energy efficiency retrofits for all existing commercial buildings at an unprecedented pace of 60 million square feet per year. Significant challenges will need to be overcome to ramp up energy efficiency programs to the levels needed to continuously green commercial office space in California at this pace over the next 20+ years.

In summer 2007, the California Sustainability Alliance (Alliance) embarked upon a “green leasing” initiative to develop and implement strategies and tools designed to overcome the primary barriers to greening the 90% of California’s office space that is leased. The Alliance developed and issued a Green Leasing Toolkit (Toolkit) on May 1, 2008. Since that time, the Alliance has been beta-testing the Toolkit with a portion of the state of California’s portfolio of state agency leases that are managed by the Department of General Services.

This report presents version 2.0 of the Green Leasing Toolkit and summarizes the Alliance’s recommendations for accelerating the greening of California’s leased office space.

Challenges & Opportunities

Approximately 90% of California’s commercial office space is leased. Greening leases in existing office space brings a unique set of challenges. Under many lease transactions, owners are not economically motivated to invest in building retrofits because the benefits of such retrofits flow to the tenants. In other lease structures, tenants are less motivated to adopt
conservation measures because the financial benefits of their actions and investments can accrue to other tenants and/or the building owner.

The focus of the Alliance’s efforts is on accelerating the greening of California’s existing office buildings through green leasing. “Green leasing” is the process of integrating “green” elements (e.g., resource efficient building design, equipment, appliances, materials and operations) into lease negotiations. In addition to the natural barrier created by the need to enter into a negotiation and a legal arrangement, there are several primary barriers to green leasing:

- **Split Incentives on Core and Shell Retrofits** – A substantial portion of high potential efficiency opportunities in existing commercial office buildings lie in “core and shell” retrofits – building envelope (windows, floors, roofs, insulation); central HVAC and other shared building systems (ducting, energy management systems and controls) – that are typically the responsibility of the building owner. Such core and shell retrofits often require significant investments with long-term paybacks that can range from 7 to 20 years or more. Building owners and investors with short-term perspectives are typically not motivated to make long-term investments.

Under most lease structures, tenants pay an allocated share of a building’s energy costs. Unless the building owner has the ability to pass on the costs of core and shell retrofits to tenants, the building owner has little incentive to make these investments since the benefits from these investments will otherwise flow back to the tenants through reduced utility costs.

- **Evolving Standards, Practices, Tools and Techniques** – Green leasing is an emerging best practice in an emerging market where the concepts and protocols are evolving real-time. The emergence of multiple green standards and regulation, metrics, valuations and tools, green leasing requires negotiating a unique balance of benefits and burdens for each leased property. As a consequence, green leasing adds time and complexity to the lease transaction.

The primary challenge to green leasing is actually not a lack of standards and practices, but that there are too many from which to choose. In the dynamic green building market, as multiple market participants seek to fill gaps in knowledge, tools and techniques, many contenders are vying to set “the” standard - from the U.S. Green Building Council’s “Leadership in Energy and Environmental Design” (LEED®) building certification system and the joint U.S. Environmental Protection Agency – U.S. Department of Energy ENERGY STAR® building rating system, to new standards being developed by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), and now, California’s own “CalGreen” building code. Each of these rating systems and standards has its own merits; but presently, no existing standard is yet particularly well suited to California’s specific mix of green building policies and markets.
As we look towards advancing green leasing in California, we see a need to adopt statewide criteria for green buildings and consistent methods, protocols and practices for measuring and reporting green building costs and benefits. Increased standardization will decrease the complexity of green lease negotiations. Presently, California local governments are leading the charge, establishing green building ordinances that are tailored to local priorities. There are both costs and benefits to this approach. Local governments have tremendous influence over the actions of key real estate market participants that tailor their strategies to the needs and interests of local and regional markets. However, there is now significant diversity among California’s local green building ordinances, increasing market complexity.

Despite all of these barriers and confusion, however, there are many more green buildings in California today than just six months ago. According to data provided by CoStar Group, nearly 10% of all office space in California was certified “green” (LEED® certified or ENERGY STAR® rated) as of the end of the third quarter in 2008. Six months later, CoStar’s database indicated that this number is now 13% - a 30% increase in green office space.

With this huge rate of success, why the concern about green leasing? The fact is that although significant progress has been made, California has a long way to go to reach the California PUC’s goals by 2030. Most of the progress to-date has occurred in Class A properties where sophisticated and well capitalized owners and tenants are driving the market to green. In fact, according to CoStar, an impressive 35% of all Class A office space in California is now either LEED® certified and/or ENERGY STAR® rated. The numbers are not impressive in Class B properties (3.6%) and Class C properties (0.2%).

**Recommendations**

The vast majority of office space that will be used in the year 2020 has already been built. Green leasing can be a key strategy for greening this existing space.

The goal of green leasing is not necessarily to abandon existing space to lease space in compliant buildings, but to encourage building owners and tenants to collaborate on means for maximizing energy efficiency and sustainability benefits in existing spaces. It is likely that not all existing space can be cost-effectively upgraded to a high performance standard. However, willing owners and tenants motivated to find the mutual benefits can collaborate on significantly improving the resource efficiency and environmental performance of California’s existing building stock.

The Green Leases Toolkit was created to help building owners and tenants develop approaches for minimizing the energy, water and waste impacts of existing space. In some cases, moving out of existing space can incur greater environmental costs and impacts (e.g., energy, solid waste and transportation-related GHGs) than remaining in an existing space. The challenge (and part of the focus of the Green Leases Toolkit) is to create a meaningful dialogue between
tenants and landlords that ultimately leads to implementing cost-effective green building measures.

All participants in the commercial leasing process have a role in greening California’s existing building stock. Tenants need to clearly articulate their green requirements, owners need to provide transparency within the leasing process as well as their building operations, and a whole host of market participants – from real estate and insurance brokers and salespersons, to policymakers, regulators, utilities, lenders and builders – need to advance green building principles and tailor policies and programs to the needs and interests of tenants and landlords.

The following table summarizes the primary market transformation strategies recommended by the Alliance and its Green Buildings Advisory Committee to support and advance green leasing in California.
### Market Transformation Strategies for Green Leasing

<table>
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<th>INCREASE DEMAND-PULL</th>
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| ▪ Document the Green Building Value Proposition | ▪ Adopt a common methodology for measuring, documenting & reporting on green building costs and benefits.  
▪ Require documentation of project costs and benefits, especially when public &/or ratepayer funds are used to help fund the retrofits. |
| ▪ Establish a Statewide Green Building Standard | ▪ Establish statewide criteria for green buildings that are ambitious but still economically achievable. |
| ▪ Implement Building Labeling | Transition AB1103 to full building labeling:  
▪ Make a finding that building labeling is in the public interest  
▪ Implement labeling statewide  
▪ Expand AB1103 disclosures  
▪ Apply a consistent statewide methodology for benchmarking a building’s resource and environmental performance |
| ▪ Leverage Market Power | ▪ Assist the state’s largest owners and tenants in establishing and adopting a common set of minimum green criteria to send a clear message to the market that any new or retrofitted commercial office space in California must meet those criteria  
▪ Partner with energy and water utilities on whole building and portfolio approaches that streamline the greening of entire inventories of buildings |
| ▪ Leverage Ancillary Markets | ▪ Provide education and training about green building characteristics, operations, costs and benefits, markets, green leasing tools and techniques, green portfolio strategies, etc.  
▪ Leverage licenses and license renewals to require training on the costs and benefits of green buildings and green real estate principles for all key market participants |

### OVERCOME ECONOMIC BARRIERS

| Market participants: utilities, real estate & insurance brokers, appraisers, lenders |
|---------------------|-------------------------------------------------------------|
| ▪ Provide comprehensive utility services including financing |
| ▪ Establish separate programs for building owners vs. tenants |
| ▪ Provide enhanced incentives for whole building and/or whole portfolio Retrofits |
| ▪ Leverage AB1103 to encourage owners to maximize their ENERGY STAR® rating |

### OVERCOME BARRIERS TO GREEN LEASING

<table>
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<tr>
<th>Building owners, tenants, utilities, ESCOs, real estate &amp; insurance brokers, appraisers, lenders and other market participants and stakeholders</th>
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<tbody>
<tr>
<td>Open dialogues about the costs &amp; benefits of potential green building retrofits, both core and shell and tenant improvements, to identify cost-effective opportunities</td>
</tr>
<tr>
<td>Discuss how utility programs can help overcome economic barriers of first costs &amp; split incentives</td>
</tr>
<tr>
<td>Promulgate messages about green building costs &amp; benefits and adapting products &amp; services to the needs of building owners and tenants under different types of leases</td>
</tr>
</tbody>
</table>
The Alliance and the members of its experienced Green Buildings Advisory Committee believe that the next crucial wave of green building retrofits will be achieved by real estate market leaders – both very large owners and very large tenants – collaborating on strategies for overcoming barriers to greening California’s existing buildings through green leases. Green leasing presents both challenges and opportunities. The substantial near-term benefits achievable through green leasing can be achieved by simplifying green leasing negotiations and establishing some standardized policies and programs.
1 INTRODUCTION

In September 2008, the California Public Utilities Commission adopted the most aggressive energy efficiency goals in the nation through its California Long-Term Energy Efficiency Strategic Plan (CEESP). The CEESP identified commercial buildings as the single largest users of energy in California, accounting for more than 38% of California’s electricity consumption and 25% of its natural gas use. The commercial buildings designation includes offices, retail establishments, hotels, restaurants, grocery stores, warehouses, manufacturing sites, schools and colleges. Within this set, office buildings are the largest energy consumers, accounting for more than 10% of all energy consumed in the State of California.

The CEESP adopted the following goals for commercial buildings:

- Zero net energy performance for all new commercial construction by 2030
- Fifty-percent (50%) of existing buildings achieve zero net energy performance by 2030

These goals anticipate integrating progressively more energy efficiency into new commercial construction at a pace of about 50 to 120 million square feet per year, and “deep” energy efficiency retrofits for all existing commercial buildings at an unprecedented pace of 250 million square feet per year. In order to achieve this goal, about 60 million square feet per year of existing commercial office buildings are targeted for retrofits.

Figure 1. “Zero Net Energy”

![Zero Net Energy](image)

* Zero net energy is a general term applied to a building with a net energy consumption of zero over a typical year. To cope with fluctuations in demand, zero energy buildings are typically envisioned as connected to the grid, exporting electricity to the grid when there is a surplus, and drawing electricity when not enough electricity is being produced.

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1 California Long Term Energy Efficiency Strategic Plan (CEESP), Section 2, page 13.
As used in the CEESP, “zero net energy” means zero net purchases of electricity and gas. In order for an existing commercial building to achieve “zero net energy”, “deep levels of energy efficiency” coupled with some on-site electricity production will be needed. This level of activity is unlikely to occur on the basis of market forces alone. A combination of upstream policies, comprehensive utility and other programs, and demand-pull will be needed to precipitate widespread market transformation.

**The California Sustainability Alliance’s Green Leasing Initiative**

In summer 2007, the California Sustainability Alliance (Alliance) assembled a group of expert advisors and professionals with substantial experience in commercial real estate to develop a pilot project designed to significantly accelerate development of green buildings in California. Through a series of workshops that commenced in July 2007, the Alliance’s Green Buildings Advisory Committee (Advisors) observed that since much more office space in California is leased (90%) than is owner-occupied (10%), the Alliance should focus its efforts on greening California’s leased office buildings.

Leased spaces in existing buildings are much more difficult to “green” for a number of reasons. Most notably, the primary energy benefits from retrofits to existing buildings are realized through modifications to the core and shell of buildings (building envelope, central HVAC, energy management and other shared building systems) that are made by the owner. Under many leases, tenants pay an allocated share of the utilities costs. Consequently, the economic benefits of core and shell retrofits made by building owners often flow to the tenants. This misalignment of investments and benefits between owners and tenants, referred to as “split incentives”, is a significant barrier to greening commercial office space in California.

Through a series of workshops and webcasts, the Alliance’s advisors identified primary barriers to greening California’s leased office space and recommended market transformation strategies. These deliberations led to design of a Green Leasing Initiative.

- Phase 1 involved development of a Green Leasing Toolkit (Toolkit) to help large landlords and tenants green their lease portfolios.
- Phase 2 includes implementation of the Toolkit with pilot participants and modifying the Toolkit contents as a result of those tests, as well as the general market evolution.
- Phase 3 will entail widespread deployment of the Toolkit to precipitate market transformation of California’s leased office space.

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2CEESP, Section 3 Commercial Buildings.
3 Navigant Consulting analysis using Co-Star data.
This Phase 2 report documents the Alliance’s pilot testing of the Toolkit and recommends changes to policies, rules, regulations and programs that could help to establish green leasing as standard practice in California.

**Types of Green Leasing Measures**

There are three primary types of green investments in lease transactions, each with its own set of challenges:

- **Core and Shell.** Green improvements affecting a building’s core and shell are much simpler to implement and much more economically feasible during new construction projects. The core and shell of an existing building is not easily modified without major occupant disturbance and may require considerable owner investments with long-term paybacks. Due to prohibitions in some leases, the landlord may not be able to recoup this core and shell investment through operating expense pass through to tenants. In some cases, tenants may be willing to contribute towards the costs of core and shell improvements, especially if they will receive economic benefits in the form of reduced utility costs and/or rents; but the tenants’ own budgetary restrictions may prohibit directly investing in core and shell retrofits where title is held by another party.

- **Tenant Improvements.** Tenants have much more control over space that they directly occupy, and can specify green elements in the interiors of their own premises. Measures include interior lighting systems and controls, plumbing fixtures, and the use of emerging sustainable and environmentally friendly materials throughout the interior construction. However, tenants do not have full control over the design, build out and operations of their leased facilities. In addition, their willingness to invest in any incremental costs for greening their space is often limited to those measures that can pay for themselves through reduced operating costs over the term of their lease. Depending on the method for allocating operating expenses among tenants, a tenant that is more energy efficient than other tenants in the building may not directly receive the economic benefits of its green interior choices.

- **Building Operations.** Designing a green building and investing in high performing efficient technologies will not make a significant difference if the equipment is not used and calibrated properly. Green leases should include provisions that specify best operations and maintenance practices. For example, green lease specifications may include building commissioning and retro-commissioning, monitoring of energy and resource use, and use of environmentally friendly cleaning products.
Green Leasing Challenges

Detailed discussions among the Alliance’s Advisors and other key stakeholders identified the primary barriers to green leasing. In this report, we present potential strategies for overcoming these challenges.

Economic Challenges

There are two types of economic barriers.

First Costs

The initial capital outlay required to implement energy efficiency upgrades, commonly referred to as “first costs”, continues to be a significant barrier. Like any capital investment, the benefits of green building design and retrofits need to be viewed on a life cycle cost basis because the initial cash outlay is expected to be rewarded through lower energy costs over the life of the retrofit.

Depending on the availability of capital at reasonable terms, investors with a long-term perspective can choose to make these types of investments and expect to earn the anticipated returns over time. However, investors that typically hold assets for relatively short terms may not expect to recover such incremental investments and may thus be reluctant to take on these types of projects. Public agencies are most disadvantaged, since many are still operating under municipal budgetary constraints that do not recognize life cycle costs and benefits.

The first cost challenge is becoming more significant for both public and private entities, exacerbated by California’s state budgetary challenges and the global credit crisis.

“Split Incentives”

Split incentives arise when the flow of investments and benefits are not properly aligned among the parties to a transaction. In leasing, split incentives are primarily caused by the two main lease structures:

- **Gross Leases** – Under gross leases, tenants pay a single lease amount that includes an allocated share of all of the building ownership costs (utilities and other operating costs, taxes and insurance). Many gross leases contain “base year provisions” in which the landlord pays for utilities up to a certain amount, often referred to as an “expense stop”. The tenant is then responsible for any expense increases over the established base year.

Split incentives arise under gross leases when a tenant has no economic incentive to invest in energy efficiency measures such as lighting, sensors or ENERGY STAR® rated office equipment because the utility costs are allocated on a pro rata share of the building. Unless all tenants in the building implement the same energy efficiency measures, a portion of the benefits of the energy-conscious tenant’s investment may accrue to other tenants.
• **Net Leases** – Under net leases, one or more expense categories are assigned directly to the tenants, with the result that the tenant is responsible for all assigned operating expenses associated with their leased space (operations including utilities, taxes and/or insurance), not just the increases in expenses over time. In a net lease, the landlord has no economic incentive to invest in upgrades because the tenant is paying the utility bills directly and thus will receive the energy savings benefits.

The green lease negotiation is simpler if a tenant is separately metered and desires to invest in energy efficiency upgrades within its own space. In that circumstance, the tenant can evaluate an efficiency investment within its leased space on the basis of the lesser of the life cycle of the efficiency measure(s) and the remainder of its lease term. However, as noted previously, many high potential energy efficiency retrofits are related to a building’s core and shell that require significant capital outlays and that have long-term paybacks. Energy costs for central air conditioning, for example, are typically allocated to all tenants on a pro rata basis of space leased.

**Leasing Challenges**

Non-economic barriers contribute to green leasing challenges.

**Lack of Standardization**

Each lease negotiation is a unique transaction. Requiring that a lease also be “green” adds time and complexity to the negotiations. A typical real estate manager or leasing agent may manage dozens of leases at any one time with a wide range of lease structures under strict time constraints. Since each lease structure results in a unique balance of benefits and burdens between the landlord and tenant, the issues of cost responsibilities need to be resolved separately for each lease. Busy real estate managers are concerned that green considerations could complicate lease negotiations and slow down the business process.

In addition, defining what is meant by “green” or “sustainable” has proven challenging for many, and the real estate industry is no exception. While certification programs such as LEED® have created a common language that is being embraced by many organizations, (a) LEED® is not a universal standard, and (b) market participants are confused by when it is beneficial to specify LEED®, ENERGY STAR® and/or other types of building codes, standards and rating systems that are being developed and promoted. Competing standards include a new American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) rating...
system that is targeted for launch in summer 2009\(^4\) and the state of California’s new Green Building Standards Code referred to as “CalGreen” that becomes effective on a voluntary basis on August 1, 2009 and is expected to become mandatory in late 2010 or early 2011.\(^5\)

Tenants have challenges defining their requirements, service providers have challenges educating their clients, and landlords have challenges creating more transparency within the leasing process. Tenants may ask their broker to find a "green building", but often cannot translate their request into specific requirements. Tenants also sometimes ask for "green audits" in their due diligence process, but are unable to articulate what they are attempting to determine. Communication is improving between Class A owners and users in large population centers, but continues to be a significant barrier in other markets.

**Limitations of existing standards**

The two most well known national programs, LEED\(^\circ\) and ENERGY STAR\(^\circ\), have limitations: LEED\(^\circ\) takes a very broad perspective to green, while ENERGY STAR\(^\circ\) focuses primarily on energy efficiency. As a result, buildings that may fall short of meeting LEED\(^\circ\) specifications are left without a recognized standard to measure, account for and validate their efforts despite having sustainability initiatives that extend beyond energy efficiency, the focus of the ENERGY STAR\(^\circ\) program. Furthermore, current certification programs have not been designed to accommodate incremental greening or the process of working towards certification during the normal course of business (i.e. equipment replacements and scheduled capital improvements).\(^6\)

The CoStar Group (www.costar.com ), the leading provider of marketing and information services for commercial real estate professionals in the U.S. and the U.K., maintains a comprehensive database of commercial real estate information - space available for lease, comparable sales information, tenant information, and properties for sale. LEED\(^\circ\) and ENERGY STAR\(^\circ\) are presently the only searchable green criteria available in the CoStar database. Although some buildings may be in the process of greening their space or landlords could be open to initiating the process with willing tenants, there is presently no established method of communicating this intention.

---


\(^6\) The U.S. Green Building Council is currently piloting its LEED\(^\circ\) Portfolio Program to encourage large portfolio companies to track and monitor building performance over time with the objective of eventually qualifying for LEED\(^\circ\) certification.
Some brokers have reported that when failing to find a suitable “green” building, tenants often default to standard lease specifications, instead of trying to find space that meets at least some green criteria.

**Limited inventory of qualified properties**

Despite the most aggressive green building program in the nation, only 13% – about 175 million square feet - of California’s office space is LEED® and/or ENERGY STAR® certified. When compared to California’s total office building stock of 61,000 buildings, LEED® and ENERGY STAR® buildings comprise only 1.3% of the total. Most of these are premium Class A buildings concentrated in the major real estate markets. There is a severe scarcity of Class B certified buildings in secondary markets and Class C green certified buildings in all markets. This lack of inventory creates significant challenges to green-minded businesses who are not candidates for Class A buildings in major geographies.

![Figure 2. Amount of Square Footage in California that is Certified “Green”](image)

See Table 1 below for square footage by market and class of property.

<table>
<thead>
<tr>
<th>Market</th>
<th>Millions of Square Feet Certified “Green”</th>
<th>Total Sq.Ft.</th>
<th>% Green</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Class A</td>
<td>Class B</td>
<td>Class C</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>60.2</td>
<td>3.7</td>
<td>0.1</td>
</tr>
<tr>
<td>San Francisco</td>
<td>38.1</td>
<td>4.9</td>
<td>0.1</td>
</tr>
<tr>
<td>Orange</td>
<td>19.8</td>
<td>1.9</td>
<td>0.1</td>
</tr>
<tr>
<td>Sacramento</td>
<td>7.8</td>
<td>2.2</td>
<td>0.1</td>
</tr>
<tr>
<td>East Bay / Oakland</td>
<td>10.4</td>
<td>2.2</td>
<td>0.0</td>
</tr>
<tr>
<td>San Diego</td>
<td>9.3</td>
<td>1.7</td>
<td>0.1</td>
</tr>
<tr>
<td>South Bay / San Jose</td>
<td>3.1</td>
<td>3.1</td>
<td>0.0</td>
</tr>
<tr>
<td>Inland Empire</td>
<td>1.2</td>
<td>1.1</td>
<td>0.0</td>
</tr>
<tr>
<td>Marin / Sonoma</td>
<td>0.9</td>
<td>0.2</td>
<td>0.0</td>
</tr>
<tr>
<td>Salinas</td>
<td>0.0</td>
<td>0.3</td>
<td>0.0</td>
</tr>
<tr>
<td>Bakersfield</td>
<td>0.0</td>
<td>0.1</td>
<td>0.0</td>
</tr>
<tr>
<td>San Luis Obispo / Paso Robles</td>
<td>0.0</td>
<td>0.1</td>
<td>0.0</td>
</tr>
<tr>
<td>Stockton / Modesto</td>
<td>0.2</td>
<td>0.1</td>
<td>0.0</td>
</tr>
<tr>
<td>Santa Barbara / Santa Maria / Goleta</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Fresno</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Santa Cruz / Watsonville</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>151.1</strong></td>
<td><strong>21.5</strong></td>
<td><strong>0.5</strong></td>
</tr>
</tbody>
</table>

|                      | **Total** | **433.1** | **592.0** | **301.0** | **1326.1** |
|                      | % Certified “Green” | **34.9%** | **3.6%** | **0.2%** | **13.1%** |

*Source: CoStar Market Data, April 2009*
Market Transformation Strategies

To overcome the barriers to greening California’s leased office buildings, the Alliance’s Advisors recommended the following market transformation strategies.

Increase Demand-Pull

*Encourage organizations that lease significant amounts of office space to establish and adopt green lease criteria, sending a clear signal to building owners and real estate investors that their properties will not be eligible unless they meet these specifications.*

Very large tenants such as the State of California and Fortune 500 companies play a significant role in market transformation. If enough large tenants specify LEED®, ENERGY STAR® or other type of green building to be a precondition to a leasing decision, developers will take steps to assure that their buildings meet these criteria so that these tenants are not precluded from leasing in their building.

The Alliance’s Advisors recommend helping major users of office space to develop and adopt green lease specifications that drive both "build-to-suit" and speculative development, encouraging developers to meet the requirements established by major customers and assure that their properties are marketable. The Alliance’s Advisors cautioned, however, that in order to assure market transformation, the large customers driving the market need to hold to their principles. If, for example, one or more of the largest tenants in the state establishes minimum green specifications but then ignores those criteria when selecting space, demand-pull will be significantly weakened.

Green Large Portfolios

*Leverage the collective market power of large owners and large tenants to accelerate transformation of the state’s inventory through whole portfolio approaches.*

Green building market transformation will be led by a handful of market leaders that collectively hold significant market power. Both very large owners and very large tenants have the power to alter the supply and demand dynamics of the state’s green real estate market. The Alliance’s Advisors recommend establishing programs that help both building owners and tenants with large portfolios of leased office space – a different type of “hard to reach” energy customer - develop and implement green portfolio specifications, criteria and strategies.

If the largest owners and tenants in the state were to adopt a common definition of “green”, the market would have no choice but to follow. No new building would be constructed that did not meet those criteria. In addition, large owners would green their portfolios to that minimum standard so as to minimize vacancies and associated financial risks.

*Bill Swettenham, Senior Vice President, CB Richard Ellis*
**Employ Incremental Strategies**

*Enable large owners and large tenants to immediately commence greening portions of their portfolios, developing realistic criteria for various segments of their portfolio.*

The path to greening a building can be incremental – the important thing is to begin and to commit to the process. Key market participants should not wait until they can perform whole building or whole portfolio retrofits. They can start with modest measures while building the capacity to launch a more comprehensive initiative. Buildings that are difficult or costly to retrofit should consider starting by adopting green operating practices. Importantly, even buildings of fairly recent vintage can achieve significant incremental energy efficiency benefits.

**Leverage Ancillary Markets**

*Increase the green building value proposition by finding and creating value in ancillary markets.*

The role of ancillary markets in precipitating green building market transformation should not be overlooked. For example, the green building decision may be significantly impacted by the ability of both owners and tenants to reduce their operating risks and access reduced insurance premiums for green buildings, materials and operating practices.

The insurance industry perspective and the impact of other ancillary markets on the value of green buildings are discussed in Chapter 5.

**Document the Green Building Value Proposition**

*Reinforce the links among green building design and measures, green building market values, owner and tenant operating costs, and tenant workforce comfort, productive and health.*

The direct link between energy and water efficiency retrofits and reduced utility costs is well understood. However, while there is increasing evidence that green buildings are deemed to have higher market values, documented evidence of the full economic benefits of green buildings – through higher capitalized values, lower vacancy rates, and lower operating costs – remains immature. It is important to continually document and communicate the higher value of green buildings throughout the market transformation process.
The Alliance’s Green Leasing Toolkit

Deliberations among the Alliance’s technical team, Green Building Advisory Committee and other key stakeholders resulted in the following recommendations for a green leasing pilot project.

- **An "approach", not a specification.** The commercial real estate market – both lessors and lessees - will resist any attempt by regulators to impose a rigid set of principles. Real estate market participants need flexibility. A green leasing program should therefore provide guidelines for a standardized approach, but not attempt to specify terms, conditions and obligations.

- **Align benefits along parties' interests.** Tenants consider costs over the life of the lease, while owners consider costs over the life of the building. Depending on the type of green investment (core and shell or tenant improvement) and the type of lease (net or gross), the cost and benefit of investment may not align or may be difficult to define. When structuring a green lease agreement, care must be taken to assure that both the landlord and tenant are properly rewarded for their green leasing investments.

- **Financing.** Traditional lease financing can be utilized for many green leasing investments. Creative financing structures can also be accessed to more rapidly convert existing building stock to “green”. A framework is needed for new and existing public buildings that would make it possible to fund with tax-exempt debt. In addition, on-bill financing could play a significant role in overcoming first cost barriers for both public and private organizations.

The Alliance thus embarked upon a pilot project to develop and test strategies to overcome the significant barriers to greening the 90% of California’s commercial office space that is leased. This effort focused on “green leasing”, i.e., integrating sustainability practices into the entire lease procurement process, from the development of the space requirements, working with service providers, site selection and due diligence, to the drafting of green lease provisions. Green leasing is applicable to new facility requirements as well as to facilities that are currently under lease.

Through this process, the Alliance developed and launched its “Green Leasing Toolkit” (Toolkit).
The Toolkit contains a suite of leasing guidelines and templates designed to facilitate an effective dialogue between owners and tenants to better define each party’s goals and objectives around sustainability, as well as to create more transparency throughout the process. The Toolkit is described in more detail in Chapter 3 and an excerpt is provided in Appendix A.

The DGS Pilot

The Alliance’s Advisors recommended that the Green Leasing Toolkit be pilot tested with California’s own portfolio of leased office space that is managed by the California Department of General Services (DGS). The State of California is one of the largest lessees in the state, with more than 1,600 leases exceeding 19 million square feet of commercial space. Of this amount, over 14.8 million ft² (78%) is office space. The Department of General Services (DGS) manages this portfolio - which amounts to approximately 1,270 office leases - on behalf of state agencies. The number and diversity of types of properties, geographic and utility service jurisdictions, and of lease transaction types represented by the state’s 1,270 office leases presents an excellent opportunity for testing many of the process and tools developed for the Alliance’s Green Leasing Toolkit.

DGS is a department within the State and Consumer Services Agency (SCSA). With the consent of SCSA executive management, the Alliance embarked upon a review of the portfolio of leased properties managed by the DGS on behalf of multiple state agencies. The primary objective of
this review was to pilot-test the Alliance’s Green Leases Toolkit. Specifically, the Alliance requested DGS’ participation in a study on opportunities to realign green investments and benefits between building owners and the state, as their tenant. Because SCSA/DGS is charged with implementing the Governor’s Green Building Initiative7, SCSA requested that the Alliance also provide recommendations on how the state can precipitate market transformation in this high potential, hard-to-reach sector through its leverage as one of the largest tenants in the market for commercial office space. The Alliance’s review of the state of California’s lease portfolio is provided in Chapter 4 of this report.

2 California’s Commercial Office Space

California has the largest and most diverse commercial office market in the country, with approximately 1.3 billion ft² of commercial office space. Of this space, 10% is owner-occupied; the remaining 90% - about 1.17 billion ft² - is leased.\(^8\)

California’s commercial office space market is comprised of several distinct sub-sectors.

- **Central Business Districts (CBDs)** are characterized by large Class A office towers and occur principally in the large urban areas of Sacramento, Oakland, San Francisco, San Jose, Los Angeles, and San Diego.

- **Suburban Office Parks.** Outside of the main CBDs are dense clusters of suburban office parks, usually comprised of “mid-rise” offices (5 to 10 story buildings) or “flex” buildings (a hybrid of research and development and office space). Silicon Valley, Orange County, and the northern markets of San Diego are examples of these markets.

- **Fragmented Markets.** Outside CBDs and their surrounding markets, the office market is highly fragmented, consisting of various product types of all classifications.

The majority of Class A office space in California is clustered in large CBD markets, while the lower quality or aging building stock is more prevalent in secondary and tertiary markets.

<table>
<thead>
<tr>
<th>Table 2. Building Classifications (Millions of Square Feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Market</strong></td>
</tr>
<tr>
<td>-------------</td>
</tr>
<tr>
<td>Los Angeles</td>
</tr>
<tr>
<td>San Francisco</td>
</tr>
<tr>
<td>Orange</td>
</tr>
<tr>
<td>Sacramento</td>
</tr>
<tr>
<td>East Bay / Oakland</td>
</tr>
<tr>
<td>San Diego</td>
</tr>
<tr>
<td>South Bay / San Jose</td>
</tr>
<tr>
<td>Inland Empire</td>
</tr>
<tr>
<td>Marin / Sonoma</td>
</tr>
<tr>
<td>Salinas</td>
</tr>
<tr>
<td>Bakersfield</td>
</tr>
<tr>
<td>San Luis Obispo / Paso Robles</td>
</tr>
<tr>
<td>Stockton / Modesto</td>
</tr>
<tr>
<td>Santa Barbara / Santa Maria / Goleta</td>
</tr>
<tr>
<td>Fresno</td>
</tr>
<tr>
<td>Santa Cruz / Watsonville</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

*Source: CoStar Market Data, April 2009*

\(^8\) Navigant Consulting using CoStar market data.
Vacancy and rental rates are tracked very closely by the real estate community, as these statistics are indicators of market health. Although the general condition of the economy has a significant influence on the performance of the commercial office market, local market dynamics can play a large role in individual markets. For instance, the San Francisco Bay Area’s commercial office markets are closely tied to the fortunes of regional technology and biotech companies, while the Sacramento market is more dependent on the operations of the state government.

Table 3. Industry Characteristics by Market

<table>
<thead>
<tr>
<th>Market</th>
<th>Inventory (# buildings)</th>
<th>Finance, Insurance, Real Estate</th>
<th>Business &amp; Other Services</th>
<th>Law Firms</th>
<th>Government</th>
<th>Medical</th>
<th>Manufacturing</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Francisco</td>
<td>3,686</td>
<td>22.5%</td>
<td>18.1%</td>
<td>12.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Bay / San Jose</td>
<td>4,382</td>
<td>12.2%</td>
<td>19.4%</td>
<td></td>
<td>28.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sacramento</td>
<td>4,780</td>
<td>21.7%</td>
<td>8.5%</td>
<td></td>
<td>15.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Los Angeles</td>
<td>15,737</td>
<td>22.6%</td>
<td>20.5%</td>
<td>11.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>San Diego</td>
<td>5,211</td>
<td>22.9%</td>
<td>11.4%</td>
<td></td>
<td>9.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orange County</td>
<td>5,366</td>
<td>28.4%</td>
<td>10.2%</td>
<td></td>
<td></td>
<td></td>
<td>12.4%</td>
</tr>
</tbody>
</table>

Source: CoStar Market Reports, Q1 2009

Vacancy rate is simply a percentage of the total amount of physically vacant space divided by the total amount of building inventory. Buildings that are currently under construction are not included in vacancy calculations. Rental rates are typically quoted as full service rents.

Table 4. Current Market Statistics

<table>
<thead>
<tr>
<th>Market</th>
<th>Square Feet (Million)</th>
<th>Vacancy</th>
<th>Average Full Service Rent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Los Angeles</td>
<td>419.1</td>
<td>10.7%</td>
<td>$29.80</td>
</tr>
<tr>
<td>San Francisco</td>
<td>158.2</td>
<td>11.7%</td>
<td>$33.80</td>
</tr>
<tr>
<td>Orange</td>
<td>143.4</td>
<td>14.0%</td>
<td>$27.29</td>
</tr>
<tr>
<td>Sacramento</td>
<td>101.1</td>
<td>15.0%</td>
<td>$22.50</td>
</tr>
<tr>
<td>East Bay / Oakland</td>
<td>113.7</td>
<td>10.7%</td>
<td>$24.56</td>
</tr>
<tr>
<td>San Diego</td>
<td>108.7</td>
<td>15.3%</td>
<td>$28.80</td>
</tr>
<tr>
<td>South Bay / San Jose</td>
<td>105.6</td>
<td>13.9%</td>
<td>$27.92</td>
</tr>
<tr>
<td>Inland Empire</td>
<td>63.9</td>
<td>16.7%</td>
<td>$21.78</td>
</tr>
<tr>
<td>Marin / Sonoma</td>
<td>28.9</td>
<td>13.9%</td>
<td>$22.65</td>
</tr>
<tr>
<td>Salinas</td>
<td>6.5</td>
<td>5.4%</td>
<td>$19.53</td>
</tr>
<tr>
<td>Bakersfield</td>
<td>10.7</td>
<td>7.5%</td>
<td>$13.12</td>
</tr>
<tr>
<td>San Luis Obispo / Paso Robles</td>
<td>5.4</td>
<td>4.9%</td>
<td>$18.44</td>
</tr>
<tr>
<td>Stockton / Modesto</td>
<td>11.9</td>
<td>16.7%</td>
<td>$17.31</td>
</tr>
</tbody>
</table>

9 Based on total square footage.
<table>
<thead>
<tr>
<th>Market</th>
<th>Square Feet (Million)</th>
<th>Vacancy</th>
<th>Average Full Service Rent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Santa Barbara / Santa Maria / Goleta</td>
<td>11.4</td>
<td>5.9%</td>
<td>$19.06</td>
</tr>
<tr>
<td>Fresno</td>
<td>30.7</td>
<td>9.9%</td>
<td>$16.33</td>
</tr>
<tr>
<td>Santa Cruz / Watsonville</td>
<td>6.9</td>
<td>8.3%</td>
<td>$19.07</td>
</tr>
<tr>
<td>Total</td>
<td>1326.1</td>
<td>12.4%</td>
<td>$27.44</td>
</tr>
</tbody>
</table>

*Source: CoStar Market Data, April 2009*

Market rents tend to be higher in more desirable, hard to access locations such as CBDs. San Francisco’s financial district achieves the highest rents, at close to $34 per square feet on average. Rents in each location vary by quality of space and other factors. The highest quality and best-located buildings may typically achieve rents that are 50% or more above the market average.

**Primary Barriers to Greening California’s Office Space**

Many studies have been conducted in California and throughout the U.S. about the challenges to greening office space. While there are some regional differences, two universal themes remain.

- **The green building value proposition is not yet clear.** Although significant advancements have been made in the green building market, it is still difficult to definitively establish the incremental value of green buildings, such that developers and owners will pay more to build them, and tenants will pay more to occupy them.

- **First costs remain a significant barrier.** Even when the green building value proposition is clear, first costs for the incremental costs of green design elements and measures present barriers for many organizations, both public and private. First costs become less of an issue when green measures can be shown to pay for themselves on a life cycle basis. However, financial structures that require segregating funds used for capital improvements from those used to pay operating costs make it difficult for many organizations to overcome the first cost barrier. First costs also remain a challenge for buildings that are not owned and operated by long term investors. Short term investors are less likely to improve buildings with longer pay back technologies if they anticipate selling the building before they can recoup their initial investment.

The above two primary barriers are more likely manageable for owner-occupied space, where the owner can choose to make green investments in expectation of lower operating costs and higher future market values. As discussed in Chapter 1, however, leased office space is much more difficult to affect. For both owners and tenants of leased space, significant barriers will need to be overcome in order to get to “zero net energy”.

21
The Green Building Value Proposition

A combination of market forces and regulation is driving real estate to be green. Over the past several years, concern for the environment has been elevated from a marginal political movement to a major force that is shaping the attitudes and behaviors of businesses and government.

<table>
<thead>
<tr>
<th>Table 5. Primary Drivers of Green Building</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policies, Rules, Regulations, Legislation</td>
</tr>
<tr>
<td>Competition</td>
</tr>
<tr>
<td>Stakeholders</td>
</tr>
<tr>
<td>Economics</td>
</tr>
</tbody>
</table>

Organizations are increasingly recognizing the importance of environmental concerns for their stakeholders, whether consumers, employees, and shareholders or the communities in which they do business. Businesses large and small are responding by adopting sustainability policies, programs and measures aimed at reducing their environmental impacts.

Real estate is high on the agenda of the environmental movement. For many businesses, the decision to occupy high performing “green” facilities is a strategic one that reflects an overall company commitment to reducing its carbon footprint. Sustainability is often aligned with corporate social responsibility, where organizations seek high social standards in their operations for the benefit of their customers, employees and the wider community.

Staff concerns are another major driver of the desire to occupy green buildings. There is a growing body of evidence supporting the higher productivity levels and lower health and absentee problems associated with green buildings. Indoor air quality, natural lighting and use of chemical free cleaners are some of the green building criteria that may have a direct impact on employee well-being. Additionally, recruitment and retention of staff is a key concern. As employees become more environmentally aware, they are paying more attention to potential employers’ green credentials.

In April 2008, the New Buildings Institute (NBI) released a study that indicated third party certified buildings outperform their conventional counterparts across a wide variety of metrics, including energy savings, occupancy rates, sale price and rental rates. The study was funded
by the U.S. Green Building Council (USGBC) and supported by the U.S. Environmental Protection Agency (USEPA).10

The NBI study indicated that new LEED®-certified buildings tend to perform 25-30% better than non-LEED® certified buildings in terms of energy use. The study also demonstrated a correlation between increasing levels of LEED® certification and increased energy savings. Gold and Platinum LEED® certified buildings, for example, demonstrated average energy savings approaching 50%. The study also showed that ENERGY STAR® labeled buildings use about 40% less energy than average buildings and emit 35% less carbon.

A study released at about the same time by the CoStar Group11 showed that LEED® buildings commanded rent premiums of $11.24/ft² over their non-LEED® peers and have 3.8% higher occupancy. Rental rates in ENERGY STAR® buildings represented a $2.38/ft² premium over comparable non-ENERGY STAR® buildings and had 3.6% higher occupancy. The CoStar study further indicated that ENERGY STAR® buildings are selling for an average of $61/ft² more than their peers, while LEED® buildings are commanding an average of $171/ft² more than non-LEED® buildings. CoStar’s findings were based on a study of more than 1,300 LEED® certified and ENERGY STAR® buildings representing about 351 million ft² in CoStar’s commercial property database of roughly 44 billion ft² nationwide. These buildings were compared to non-green properties with similar size, location, class, tenancy and year-built characteristics.

There is no dispute about the higher performance of certified green buildings since that can be objectively substantiated. Even among the Alliance’s technical team and real estate advisors, however, experts disagree as to whether there is sufficient evidence that certified green buildings command higher market values. A building’s sales price is determined by many factors including building-specific characteristics, current and near-term demand for office space of this kind within the local market, inventory of comparable office space within reasonable proximity of the targeted geographic area, broader market and economic factors such as U.S. economic pressures and the global credit crisis, the seller’s need for near-term capital and other drivers for selling the property at this particular time. It is therefore very difficult to prove or measure the contribution of any single factor, such as green certification, to a building’s ultimate sales price. These issues are discussed more fully in Chapter 5, The Case for Green Leasing and in Chapter 6, Findings and Recommendations.

**Identifying a “Green Building”**

One of the most straightforward ways to procure green space is to lease in buildings that currently have a green building rating or certification. While there are a number of different types of certifications, the most recognized and understood today are LEED® and ENERGY STAR®.

**LEED®**

The U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED®) Green Building Rating System™ was established to encourage and accelerate global adoption of sustainable green building and development practices through the creation and implementation of universally understood and accepted tools and performance criteria. There are four types of LEED® ratings that could be applied to various types and aspects of commercial office buildings:

- **LEED® for New Construction and Major Renovations** is designed to guide and distinguish high-performance commercial and institutional new construction projects.
- **LEED® for Existing Buildings: Operations & Maintenance** provides a benchmark for building owners and operators to measure operations, improvements and maintenance. The majority of green leasing activities will fall under this designation as it applies to the existing building stock.
- **LEED® for Commercial Interiors** is a benchmark for the tenant improvement market that allows tenants to control the certification process, realizing that they will not always have full control of other building programs and operations.
- **LEED® for Core & Shell** aids designers, builders, developers and new building owners in implementing sustainable design for new core and shell construction. This rating is complementary to the Commercial Interiors program and acknowledges that speculative developers will not have full control of the entire facility build out.

Within each of these ratings, there are increasing scores – Certified, Silver, Gold and Platinum - based on the degree of sustainability measures that are implemented. As of April 2009, there were approximately 604 LEED® certified commercial office buildings in the U.S., of which 86 (14%) were in California.

LEED® creates a menu of design and operations prerequisites and credits that were identified by key stakeholders as important sustainability criteria. The menu and points system is tailored

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13 CoStar Market Data [accessed April 28, 2009].
by LEED® rating for various types or aspects of facilities. LEED® includes a requirement for ENERGY STAR® in its LEED®-EB (Existing Buildings) rating.

**ENERGY STAR®**

ENERGY STAR® is a joint program of the U.S. Environmental Protection Agency (USEPA) and the U.S. Department of Energy (USDOE). USEPA developed and manages an energy performance rating system that is used throughout the U.S. Buildings that receive a rating of 75 or more are recognized with an ENERGY STAR® plaque, indicating they are among the top 25% of facilities in the country with respect to energy performance. As of April 2009, there were 2,792 ENERGY STAR® rated office buildings in the U.S. Of these, 926 (33%) were in California.14

ENERGY STAR® applies a national energy performance rating, or benchmark on a scale of 1-100, to help energy managers assess how efficiently their buildings use energy, relative to similar buildings nationwide. A rating of 50 indicates average energy performance, while a rating of 75 or better indicates top performance. ENERGY STAR® includes consideration of both energy and water in its rating.

**CalGreen, a New California Standard**

California recently adopted a statewide Green Building Standards Code.15 The Code, which is a new addition to the California Building Standards Code (also called Title 24), applies to all new construction or major remodels, from single family homes to apartment buildings, offices, hospitals, and more. It will become effective on a voluntary basis beginning August 1, 2009. A revised edition will become mandatory in late 2010 or early 2011.

The Code, also called the CalGreen Code, is similar to LEED®, Green Globes, and other green building certifications, in that it covers all aspects of sustainability, from site selection to energy consumption and indoor air quality. However, unlike other systems, there is a single standard for all buildings, regardless of building type. This standard is specifically designed for California’s resource priorities, climate and building methods. For example, because of California’s water supply challenges, the standard calls for a 20% reduction in indoor water consumption and a 50% reduction in landscaping water use.


The new CalGreen Code is designed to push the envelope in bringing green building practices to the mass market. However, the Code is only a minimum standard. If counties or municipalities wish to mandate even more ambitious standards, they are free to do so. The Code is also compatible with LEED®, ENERGY STAR®, and other green building standards, making it easy for building owners and developers to gain certification. In fact, by calling for a 15% reduction in energy consumption relative to California’s existing building codes, CalGreen compliant buildings are guaranteed to qualify for ENERGY STAR® certification.

**The Market for Green Buildings in California**

The market for green commercial office space in California is characterized by low but increasing availability and rising demand. Principal market drivers include significant increases in federal, state and local green building policies, goals and mandates; increased attention and awareness by corporate leaders; reduced costs of green technologies and measures; growing expertise within the construction and architectural design industries; improved knowledge and value of certification standards; and reduced operating costs.

**Figure 4. California’s Green Building Market At-a-Glance**

<table>
<thead>
<tr>
<th></th>
<th>#Buildings</th>
<th>% Bldgs</th>
<th>Ft2</th>
<th>%Ft2</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEED® Certified</td>
<td>87</td>
<td>0.14%</td>
<td>19.5 Million Ft2</td>
<td>1.5%</td>
</tr>
<tr>
<td>ENERGY STAR® rated</td>
<td>723</td>
<td>1.2%</td>
<td>164.4 Million Ft2</td>
<td>12.4%</td>
</tr>
<tr>
<td>All California</td>
<td>61,000</td>
<td>100%</td>
<td>1.326 Billion Ft2</td>
<td>100%</td>
</tr>
</tbody>
</table>

Presently, there are 61,000 commercial office buildings in California that account for 1.326 billion ft². Of these, 87 buildings (0.14%) totaling 19.5 million ft² (1.5%) are LEED® certified. In addition, 723 ENERGY STAR® rated buildings (1.2%) accounting for 164.4 million ft² (12.4%) are ENERGY STAR® certified.

The rate of construction of green buildings within the commercial sector is accelerating. According to global real estate investment company RREEF, the number of LEED® projects has grown over the past 3 years at a compound annual growth rate of 50-100%. In the period

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2006-2007, the multi-tenant commercial sector grew to represent 13.8% of LEED® buildings, up from just 1% of all LEED® buildings during the years 2000-2003.17

**Green Market Power**

The top 10 owners of commercial office space in California account for more than 8% of all rentable building area.

<table>
<thead>
<tr>
<th>Rank</th>
<th>True Owner</th>
<th>Rentable Building Area (ft²)</th>
<th>% Total Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The Irvine Company</td>
<td>21,334,490</td>
<td>1.61%</td>
</tr>
<tr>
<td>2</td>
<td>RREEF America</td>
<td>12,914,300</td>
<td>0.97%</td>
</tr>
<tr>
<td>3</td>
<td>Maguire Properties</td>
<td>12,706,063</td>
<td>0.96%</td>
</tr>
<tr>
<td>4</td>
<td>Jamison Services Inc.</td>
<td>12,625,504</td>
<td>0.95%</td>
</tr>
<tr>
<td>5</td>
<td>Douglas Emmett Management</td>
<td>12,170,696</td>
<td>0.92%</td>
</tr>
<tr>
<td>6</td>
<td>The Blackstone Group</td>
<td>11,970,331</td>
<td>0.90%</td>
</tr>
<tr>
<td>7</td>
<td>Hines</td>
<td>7,229,880</td>
<td>0.55%</td>
</tr>
<tr>
<td>8</td>
<td>Kilroy Realty Corporation</td>
<td>7,117,939</td>
<td>0.54%</td>
</tr>
<tr>
<td>9</td>
<td>Shorenstein Company, LLC</td>
<td>5,430,573</td>
<td>0.41%</td>
</tr>
<tr>
<td>10</td>
<td>Legacy Partners</td>
<td>5,069,833</td>
<td>0.38%</td>
</tr>
<tr>
<td></td>
<td><strong>Totals</strong></td>
<td><strong>108,569,609</strong></td>
<td><strong>8.19%</strong></td>
</tr>
</tbody>
</table>

*Source: CoStar Market Reports April 2009*

In addition, the largest concentration of leased commercial space is occupied by a few of the largest users. About 10% of all tenants lease space over 50,000 square feet.19 Collectively, these tenants lease about 650 million ft², which accounts for half of the total leased office space in California. Significant influence and change can thus be precipitated by focusing on a small percentage of both the owner and tenant bases.

In addition to government, the majority of large users of space are large multinational corporations. There is a growing commitment to green building among these companies due to the expected business benefits that include reduced operating costs, employee retention and acquisition, and competitive advantages and market differentiation. As seen in the chart below, the majority of corporate executives believe green building is already a mainstream trend, with many also agreeing that it is moving towards being a requirement.

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18 Prepared by Navigant Consulting, Inc. based on data licensed by CoStar Group, Inc.
Large companies lease the majority of their office space and thus their green demands (whether through green certification such as LEED®, ENERGY STAR® or the development of individual specifications) will require the real estate industry to take notice and adjust accordingly. This is especially true given the likelihood that the next five years are predicted to be a period of higher vacancies and a highly competitive leasing market. In this type of market, landlords cannot afford to risk being excluded from any portion of the market. A green building is now perceived as a plus in the site selection process of most corporate real estate decision makers.

Government policy is also a driver of the green building movement. In California, Governor Schwarzenegger set the tone for the State with Executive Order S-20-04 (CA July, 2004), also known as the “Green Building Initiative”, which called for a 20% reduction in electricity use in State buildings by 2015 (California Executive Order S-02-04). The Green Building Action Plan (GBAP) accompanying the Executive Order also established requirements for LEED® certification of State-owned buildings and preference for ENERGY STAR® rating for leased space.

Figure 5. Corporate Executive Views Concerning Green Buildings


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21 See http://www.green.ca.gov/default.htm.

While there are many policies and programs that help developers and owners green their new and existing office buildings, a huge gap remains in leased office space in existing buildings. The CEESP recognized this gap as a barrier, and recommended that market participants “Explore changes to standard lease terms to address perceived tenant/owner “split incentives” issue.”

In addition, the CEESP recommended that state and local government lead the market by benchmarking, submetering, commissioning by 2012, and upgrading to the next level of energy efficiency by 2015, all government owned and leased buildings. Further, the CEESP recommended that building energy and carbon benchmarking and labeling be implemented to inform building owners, tenants and prospective buyers about the relative efficiency, operating costs, and carbon footprints of buildings and leased space to drive competitive market demand

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22 A tax deduction of up to $1.80 per square foot is available to owners or designers of new or existing commercial buildings that save at least 50% of the heating and cooling energy of a building that meets ASHRAE Standard 90.1-2001. Partial deductions of up to $.60 per square foot can be taken for measures affecting any one of three building systems: the building envelope, lighting, or heating and cooling systems. These tax deductions are available for systems “placed in service” from January 1, 2006 through December 31, 2013. [http://www.energystar.gov/index.cfm?c=products.pr_tax_credits#s8]


24 CEESP, Section 3, p.39.

25 CEESP, Section 3, p.36.
for greener, more efficient buildings – both new construction and improvements to existing structures.\textsuperscript{26}

\textsuperscript{26} CEESP, Section 3, p.32.
Green leasing requires that building performance become transparent to all parties involved in the lease transaction. Building performance includes the efficiency of the main engineering plant (HVAC, plumbing, lighting, etc.), the environmental effectiveness of materials used in shell construction, and the effectiveness of the building in supporting tenants’ and building staff’s daily work programs.

Green leasing alters the traditional relationship between the landlord and tenant. Some tenants now demand alterations in core and shell improvements and that landlords perform building operations and maintenance in specific ways. Some landlords now dictate the type of materials and equipment a tenant can use in its office environment and demand compliance around building programs such as recycling and conservation.

The likelihood of a successful green lease negotiation relies primarily on the following factors:

1. The landlords’ and tenants’ willingness to work together to create a more sustainable facility.
2. The amount of influence or leverage that the green-minded party (landlord or tenant) has over the other.
3. Proper calibration of the costs and benefits of green investments through the lease.27

A strong understanding of how these factors should be addressed through the lease negotiations is essential to success.

**Greening a Lease Portfolio**

Large lease portfolios are typically comprised of multiple types of users with diverse real estate requirements. Lease portfolios may include headquarter campuses, research and development facilities, sales offices, retail stores, training centers, and call centers. Some business units may have additional or unique facility needs. All of these factors affect the size and complexity of the portfolio.

There is no single solution for driving large and diverse portfolios to sustainability and environmental performance. Selecting green criteria that are too general may yield unreliable and unexpected results; too stringent criteria may result in not identifying qualified space. In

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27 As previously discussed, the two types of leases (net or gross) have very distinct financial structures that may discourage certain types of lease investments. These disincentives will need to be remedied through the green lease negotiation.
both cases, the majority of the portfolio may be determined “not green-able” even though some sustainability measures may be highly feasible. As noted previously, every lease negotiation is a unique transaction. However, real estate organizations do not have the time or resources to customize solutions for every individual lease.

Consistent with the recommendations of its Advisors – i.e., to precipitate market transformation by helping large owners and tenants lead the greening of California’s leased office space – the Alliance developed an approach for accelerating the conversion of large existing office space portfolios to “green”.

**Figure 6. Greening a Lease Portfolio**

The lease portfolio greening process is described in more detail below.

**1 - Portfolio Characterization**

“Portfolio characterization” involves grouping properties or leases within the portfolio by common characteristics to facilitate development of strategies designed to maximize negotiating leverage for each group of leases. Ideally, the strategies should be realistic and achievable within each group of lease types, but also reach for a high level of green results.

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28 The charts and information herein primarily describe portfolio transformation from the tenants’ perspective. Many of the processes are similar for both landlords and tenants, except that landlords tend to view and analyze opportunities on a building basis rather than by lease.
The bases for portfolio segmentation should be indicative of the amount of negotiating leverage the portfolio manager can expect to have with respect to negotiating green specifications. Following are some of the primary portfolio characteristics that are relevant to identification of green leasing strategies.

- **Size of Leases as % of Total Rentable Space in Building** – The size of the lease in relation to the total building size is indicative of the amount of influence a single tenant is likely to have in decisions about building retrofits and operation and maintenance issues. The higher the percentage of space leased by a single tenant, the greater the leverage in specifying green measures. A tenant that leases 75-100% of a building should establish very aggressive green criteria that include improvements to the building’s core and shell.

- **Lease Term** – The longer the lease term, the more feasible investments in building upgrades become due to the ability for the investor to recoup its initial capital costs. Many green building upgrades related to core and shell improvements (HVAC, building envelope, roof) have longer payback periods than interior upgrades (lights and controls), and thus are typically most attractive to tenants and landlords that have longer term leases and that include life cycle cost analyses in their investment criteria. Leases with terms longer than 10 years are candidates for more comprehensive sustainability options.

- **Building Age** – The vintage of a building is a general indicator of energy and water efficiency potential. Older buildings are likely to have more greening opportunities. Green criteria should include retro-commissioning, technology upgrades, and operations and maintenance practices.

- **Lease Structure** – Lease structure, or the type of operating expense clause applied in the lease, is an important indicator of the type of green leasing strategy that should be undertaken. As discussed earlier in this paper, the lease’s structure defines the responsibilities for paying the operating expenses, including utilities.
  
  - A **gross lease** is one in which the landlord is responsible for providing and paying for all operating expenses including utilities. The utility costs are included in the tenant’s lease payment. Under this type of lease, energy-savings (i.e. lower utility bills) that may result from efficiency upgrades benefit the landlord directly. Consequently, unless there is a specific provision that conveys energy savings to the tenant by reducing the gross rent, tenants have no economic incentive to invest in any efficiency measures, whether within their own interior spaces or within building common areas. However, the landlord has a strong economic motive to reduce operating costs for these types of leases.
  
  - A **net lease** is a lease in which the tenant is responsible for paying some or all of the operating costs. Net leases discourage landlords from energy efficiency investments since benefits flow to the tenants in the form of reduced operating costs. Conversely, net leases encourage tenants to directly investment in
leasehold improvements when these reduce their operating costs. Investment decisions continue to be difficult for major building systems (HVAC and plumbing) that tend to have significant costs, long paybacks, and values that flow to multiple tenants. Most leases allow landlords to amortize the capital costs of energy efficiency equipment if the upgrade results in lowered total operating costs.

- **Single-Tenant vs. Multi-Tenant** - From both the tenant and landlord viewpoint, there is greater flexibility to implement green programs when there is a single building occupant.

- **Building Management** - The buildings management team and their green building program is a great indicator of the greening feasibility of a certain lease. Experienced property management teams who work within companies that have established policies and protocols around green building practices are key facilitators of successful green leasing strategies.

### 2 - Green Criteria

Once green leasing potential is characterized for the various lease types, green criteria are established for each portfolio segment. Green leasing criteria can specify a green lease certification (such as LEED® or ENERGY STAR®), or building programs and technologies around energy, water, recycling, building monitoring, and alternative transportation. The selected criteria should support the organization’s sustainability goals and targets. For example, if an organization has adopted a company-wide goal to reduce its energy and water use by 15%, the portfolio criteria should be structured to help achieve those goals.

Establishing clear criteria for each segment of the portfolio enables real estate managers and service providers to apply these criteria to new, renewing and existing leases. Through portfolio characterization, instead of holding out for a “one size fits all” result, incremental progress can be made across the portfolio.

Green criteria are typically expressed in specification sheets or “check lists”. Green leasing tools that tenants can use to integrate their portfolio criteria are discussed later in this chapter. Below are examples of two different approaches to establishing and applying green leasing criteria. Table 8 illustrates a method for specifying green criteria for groups of leases in the portfolio. Table 9 illustrates a method for specifying criteria by lease characteristics.
Table 8. ILLUSTRATIVE Green Lease Criteria by Lease

<table>
<thead>
<tr>
<th>OPTIONS</th>
<th>Type 1</th>
<th>Type II</th>
<th>Type III</th>
<th>Type IV</th>
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</thead>
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<tr>
<td><strong>Building Certifications</strong></td>
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<tr>
<td>ENERGY STAR® Rating</td>
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<td></td>
<td></td>
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<tr>
<td>LEED®-EB</td>
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<td></td>
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<tr>
<td><strong>Alternative Transportation</strong></td>
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<td></td>
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<tr>
<td>Employee Shuttle</td>
<td>♦</td>
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<td></td>
<td></td>
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<tr>
<td>Employee Bike Use</td>
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<td>♦</td>
<td></td>
<td></td>
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<tr>
<td>Fuel-Efficient Vehicle Use</td>
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<tr>
<td>Carpool Use</td>
<td>♦</td>
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<td></td>
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<tr>
<td><strong>Water Use</strong></td>
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<td></td>
<td></td>
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<tr>
<td>Water Fixture Efficiency</td>
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<td>♦</td>
<td>♦</td>
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<tr>
<td>Irrigation Systems Efficiency</td>
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<td><strong>Energy Use</strong></td>
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<tr>
<td>ENERGY STAR® Rating</td>
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<td>Lighting Controls</td>
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<tr>
<td>Retrofitting Program</td>
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<tr>
<td>Energy Optimization Plan</td>
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<tr>
<td>Renewable Energy</td>
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<tr>
<td>Maintenance Staff Training</td>
<td>♦</td>
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<tr>
<td>Separate Metering</td>
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<td>♦</td>
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<td><strong>Maintenance and Monitoring</strong></td>
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<td>Building Operations and Maintenance</td>
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<td>Building Systems Monitoring</td>
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<tr>
<td><strong>Recycling</strong></td>
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<tr>
<td>Waste &amp; Diversification Audit</td>
<td>♦</td>
<td>♦</td>
<td></td>
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<tr>
<td>Building Recycling Program</td>
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<td>♦</td>
<td>♦</td>
<td>♦</td>
</tr>
<tr>
<td>Waste Storage &amp; Transport</td>
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<td>♦</td>
<td>♦</td>
<td>♦</td>
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<tr>
<td>Toxic Material Source Reduction</td>
<td>♦</td>
<td>♦</td>
<td>♦</td>
<td>♦</td>
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<tr>
<td>Construction &amp; Demolition Waste Management</td>
<td>♦</td>
<td>♦</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 9. ILLUSTRATIVE Green Lease Criteria by Lease Characteristics

<table>
<thead>
<tr>
<th>Lease Characteristics of Portfolio Segment</th>
<th>MINIMUM Green Lease Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very large lease or 100% of building</td>
<td>LEED-Silver® + ENERGY STAR® rated29 + LEED®-Commercial Interiors</td>
</tr>
<tr>
<td>Large lease or &gt;50% of building</td>
<td>ENERGY STAR® rated + LEED®-Commercial Interiors</td>
</tr>
<tr>
<td>Mid-size lease or &lt;50% of building, partial service</td>
<td>LEED®-Commercial Interiors</td>
</tr>
<tr>
<td>Mid-size lease or &lt;50% of building, full service</td>
<td>Advanced lighting systems &amp; controls</td>
</tr>
<tr>
<td>Small lease or &lt;25% of building</td>
<td>Advanced lighting systems &amp; controls</td>
</tr>
</tbody>
</table>

29 A requirement for ENERGY STAR® rating is included in LEED®-EB.
Other characteristics might include building type (Class A, B or C); climate zone and topology (coastal, desert or inland); lease term (number of years remaining on the lease(s)); etc. The objective is to establish reasonably achievable goals for each segment of the portfolio.

3 – Green Lease Negotiation

Green building is not yet standardized. In most cases, landlords and tenants have varying commitments to environmental stewardship. As a result, green leasing involves significant negotiation.

There are 3 methods of engaging in the green lease negotiation process.

1. **New leases** pertain to new facility requirements. A site selection process using a real estate broker is typically required. A green-minded tenant has the advantage in new leases, since the tenant has the ability to choose the building and its landlord. It is important that the tenant effectively communicates its green criteria to its brokers and is able to analyze the green attributes of one building over another.

2. **Renewing leases** are leases that are expiring within a short time period (less than one year). The landlord and tenant are most likely communicating regarding the potential renewal deal. In many instances, the tenant has leverage since it has the option to move to another location or negotiate new terms with the existing landlord. Tenants who are renewing their leases in down (i.e., low demand) real estate markets typically have additional negotiation leverage and should be proactively discussing the greening potential of the building with the landlord.

3. **Existing leases or “mid-term” leases** are those in which the tenant has significant remaining term before the lease expiration. Many tenants do not realize the fact that negotiations regarding building improvements can be negotiated during the lease term. Tenants and landlords should be actively communicating with one another throughout a lease relationship to collaborate on achieving their individual and joint sustainability goals and objectives.

Although new leases typically provide more flexibility due to the fact that there are multiple buildings options, the basic premise of engaging in the negotiation process in each scenario is similar. Successful green leasing programs are those in which an organization’s sustainability goals and criteria are effectively communicated throughout the leasing process. Successful tenants are prepared to discuss their specifications early in the process. They communicate to their brokers, architects, and potential landlords the type of green facility and performance that they will require. Successful green landlords create transparency throughout the negotiation process. They are open to improving the performance of the building and are willing to take the time to analyze the financial feasibility of certain investments and how these can be accomplished within the lease structure. Open communications is key.
Green lease negotiations bring a series of new questions and issues that are not necessarily present in traditional lease deals. Examples of two common issues and related questions that arise in green lease negotiations are described below.

**Assessing the current performance of the building**

*What types of green criteria are being recommended? Are they already included in the landlord’s core and shell, TI specifications and/or building operating protocols? How can tenants ascertain the current performance of the building?*

Green-minded landlords are becoming more proactive about publishing key building sustainability data. An increasing number of owners are also utilizing benchmarking tools such as ENERGY STAR®’s Portfolio Manager. This allows tenants to access key green leasing criteria. In addition, California’s Assembly Bill 1103 requires utilities to obtain permission from building owners to upload building energy data to Portfolio Manager, and for building owners to disclose building energy consumption information to potential buyers and 100% tenants commencing in 2010 (see Chapter 6, Findings and Recommendations).

Most landlords, however, do not yet publish or track these types of performance data. This does not mean that the landlord will not cooperate in sharing their building’s data with the tenant and assist the tenant in working through their green leasing objectives in the negotiation process. Tenants should always obtain information about a building’s energy performance before entering into a lease commitment. This information enables integrating life cycle cost information into the lease negotiations.
Figure 7. Example of a Green Building Environmental ScoreCard

**Green Building Initiative**

**Environmental Score Card**

**Building Score:**

<table>
<thead>
<tr>
<th>Year</th>
<th>EPA ENERGY STAR Rating</th>
<th>% Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>86</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>86</td>
<td>0</td>
</tr>
</tbody>
</table>

**Site Energy Use Summary:**

- Baseline Source Energy Intensity (kBtu/sq.ft.): 173.9
- Current Source Energy Intensity (kBtu/sq.ft.): 180.5

**CO₂ Emissions Reduced (Based on Site Energy Use):**

- CO₂ (1000 lbs/yr) Tons of Gas: 2.07

**The Above Reduction is Equivalent to CO₂ Emissions From:**

- Passenger cars not driven for one yr: 0.34
- Tons of waste recycled instead of landfilled: 0.65
- Propane cylinders used for home barbecues: 7.8
- Household electricity use for 1 yr (in 1 of households): 0.25
- Household energy use for 1 yr (in 2 of households): 0.17
- Barrels of gasoline consumed: 213
- Barrels of oil consumed: 4.4

**The Above Reduction is Equivalent to the Carbon Removed By:**

- Tree Seedlings Grown for 10 years: 48.29
- Acres of pine or fir forests storing carbon for one yr: 0.43
- Acres of forest preserved from deforestation: 0.01

The EPA ENERGY STAR PROGRAM uses a rating system to assess the energy efficiency of buildings relative to similar buildings nationwide. This rating system is on a scale from 1-100; a rating of 50 indicates average energy performance, while a rating of 75 or better indicates top performance, i.e. equal to or better than 75% of all similar buildings nationwide. An Energy Star Label is given only to buildings that rate over 75.

**Greenhouse Gas Emissions / Carbon Foot Print Reduction (CO₂ - 1000 lbs/yr.) Tons of Gas:** 2.07

July 2008
Green lease financing

What incremental costs may be attributable to the green criteria? What is the typical payback of these investments? Can these improvements be implemented without major disturbance to existing building occupants? Who and how will these incremental investments be paid?

Tenants that have clearly defined sustainability targets for their leased portfolios will likely find that they are driving the green lease negotiation. The tenant’s real estate managers need to understand the economic impacts of their own criteria. Budgets and cost-benefit analyses should be reviewed prior to the actual lease negotiation.

The tables below outline the basic financing mechanisms used in commercial office leasing. In most cases, green improvements can be financed through these mechanisms.

Table 10. ILLUSTRATIVE Landlord Funding Mechanisms

<table>
<thead>
<tr>
<th>Sources</th>
<th>General Description</th>
<th>Uses</th>
<th>Motivation</th>
</tr>
</thead>
</table>
| Capital Investment           | Investment in the initial construction or upgrading of the core building functions  
   • Return on investment (ROI) generated through rents – thus buildings are limited to what the market will support.                                           | • LEED® and ENERGY STAR® certification programs   
   • Electrical & mechanical systems   
   • Monitoring & control systems   
   • Efficient irrigation systems   
   • Renewable energy technology   | • Attract green-minded tenants   
   • Reduce operating expenses thus increasing net operating income (NOI)   
   • Qualify for tax incentives and rebates   
   • Fast track entitlement process through planning agency programs   
   • Remain competitive   
   • Fulfill organizations’ sustainability policies & goals   
   • Increase Property Values |
| Capital Upgrades – Tenant Reimbursement | Investment in upgrades or replacement of core building plants & systems  
   • Costs are amortized & recouped through tenant reimbursement per the lease, as long as upgrades reduce existing operating expenses. | • Electrical & mechanical systems   
   • Monitoring & control systems   
   • Efficient irrigation systems   
   • Water efficiency upgrades   |                                                                                                                                                              |
| Operating Expenses         | Costs that fall under the operating expense definition within a lease. This typically includes janitorial, security, property management functions, waste removal, landscaping, etc.  
   • Costs are directly reimbursed by the tenant through the terms of the lease’s operating expense clause. | • Optimizing recycling programs   
   • Commissioning   
   • Training & educational programs   
   • Employee shuttle & other alternative transportation options   
   • Maintenance & monitoring of building systems   | • Remain competitive   
   • Fulfill organizations’ sustainability policies & goals   
   • Increase Property Values |
Table 11. ILLUSTRATIVE Tenant Funding Mechanisms

<table>
<thead>
<tr>
<th>Sources</th>
<th>General Description</th>
<th>Uses</th>
<th>Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate Capital “Self Funding”</td>
<td>Investment in the initial construction or upgrading of the core building’s plants &amp; systems  &lt;br&gt; ROI generated through cost savings &amp; sustainability benefits over the term of the lease.</td>
<td>• LEED® and ENERGY STAR® certification programs  &lt;br&gt; • Electrical &amp; mechanical systems  &lt;br&gt; • Monitoring &amp; control systems  &lt;br&gt; • Efficient irrigation systems  &lt;br&gt; • Renewable energy technology</td>
<td>• Tenants with long-term “triple net leases” may find it economically viable to self-fund equipment with strong ROIs.  &lt;br&gt; • Reduce operating expenses within the lease.  &lt;br&gt; • Maintain a workplace environment that adheres to an established corporate sustainability policy.  &lt;br&gt; • Fulfill a corporate sustainability goal.</td>
</tr>
<tr>
<td>Tenant Improvement Allowance</td>
<td>Funds provided by the landlord  &lt;br&gt; • Depending on the level of existing building improvements, use of funds may be restricted to certain budget limits.</td>
<td>• Electrical &amp; mechanical systems  &lt;br&gt; • Monitoring &amp; control systems  &lt;br&gt; • Irrigation systems  &lt;br&gt; • Renewable energy technology  &lt;br&gt; • Bike &amp; shower facilities</td>
<td>—</td>
</tr>
<tr>
<td>Additional Landlord Funding</td>
<td>Additional improvement funds over &amp; above the initial TI Allowance – essentially a loan provided by the landlord  &lt;br&gt; • Landlord would amortize the costs over a specific time period and recoup through the tenant’s rent payment.</td>
<td>• Green equipment premiums in which the landlord would not normally invest  &lt;br&gt; • Qualified consultants to assist in sustainable design</td>
<td>—</td>
</tr>
<tr>
<td>Direct Expense</td>
<td>Procurement of additional building services through landlord  &lt;br&gt; • Landlord bills tenant directly for additional expenses.</td>
<td>• Operation &amp; maintenance upgrades to equipment  &lt;br&gt; • Commissioning  &lt;br&gt; • Waste stream audits</td>
<td>—</td>
</tr>
</tbody>
</table>

After the main green lease negotiation points have been agreed to, the terms should be documented within the lease. For existing leases, new terms will typically be contracted through a lease amendment. Examples of specific lease language and provisions are contained in Appendix A.

4 – Measurement and Monitoring

An integral part of the green leasing process includes documenting the results of green leasing strategies, both for individual leases and for the entire portfolio. Documentation should include collection and analyses of utility bills and recycling programs, use of comprehensive energy management programs, and other types of instruments that collectively comprise a suite of portfolio measurement tracking and reporting tools and protocols. Portfolio measurement and monitoring creates a feedback loop for adjusting the portfolio’s green leasing strategies as may be needed to improve effectiveness.

The Green Leasing Toolkit

While it is important to maintain agility in any negotiation, a structured and standardized green leasing process can increase the likelihood of a successful outcome. A typical lease procurement process can range in duration from 3 to 18 months depending on the complexity of the negotiation and the build out of the space. The lease procurement process begins when a facility need is identified (this may be the need for new space or the need to renew an existing
lease), then internal (Lease Manager) and external (Broker) resources are assigned to the project, site visits are made with the client (Tenant), and leases are negotiated.

Successful green leasing requires planning, preparation, analysis, and open dialogues between landlords and tenants. The Alliance’s Toolkit provides tools and templates that integrate green into all aspects of the leasing process, including service provider selection; development of green specifications and marketing materials; requests for proposal (RFP) and letters of intent (LOI); site due diligence; and the negotiation and drafting of realistic and enforceable lease language.

The templates offered in the Green Leasing Toolkit are established processes within the leasing industry; therefore, most of these tools should be relatively easy to implement. These tools can be used by both landlords and tenants who manage or occupy large portfolios of facilities, as well as small business owners and landlords who hope to green an individual building.30

Figure 8. Green Leasing Tools

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30 The tools that are provided on the Alliance’s website are generic examples and have not been customized to an individual organization. Due to the fact that each organization, portfolio, and building is unique, a certain amount of customization will be required to successfully use the tools to integrate sustainability initiatives in the leasing process.
Below is a description of the tools that could be utilized to assist in the portfolio greening process.

(A) Green Policy Document: Linking Sustainability Goals to Leasing
This document is a high level policy statement in which an organization defines its intended sustainability goals as they relate to leased facilities. Key focus areas are energy and water use, indoor air quality, waste recycling, and alternative transportation. The green policy statement should be introduced to the various parties engaged in the leasing process, including brokers, architects, landlords, etc. The statement communicates to both employees and outside vendors the sustainability practices the company expects in its office environment. The Green Policy Statement can also include the tenant’s green criteria that were established during the Portfolio Characterization process.

(B) Request for Proposal: Establishing Green Initiatives Early
Once a short list of sites has been established, it is customary for a tenant to issue a Request for Proposal (RFP) through its broker representative. The RFP is used for soliciting, evaluating, and selecting proposals from landlords, and defines the tenant’s basic requirements such as the definition of the premises, lease term, expansion and renewal options, rental rate, and tenant improvements. The Green RFP includes a tenant’s requirements relating to its green practices and how these will be structured into the lease document. The green RFP can also be used by tenants who wish to address landlords during their lease term. An RFP can be a good vehicle for opening a discussion with a landlord about the tenant’s green criteria for the space.

(C) Due Diligence Scorecard: Comparing the Options and Making an Informed Decision
After the tenant has received responses back from short-listed landlords – usually in the form of a Letter of Intent (LOI) – the tenant will need to analyze the proposals against one another. This comparative analysis evaluates the financial (rent, expenses, TI allowances), the legal (lease term, options, use) and the operational terms of a specific deal. A scorecard that includes each building’s green attributes will allow for more informed decisions around a company’s green leasing decisions.

(D) Lease Provision Database: Integrating Your Green Initiatives into the Lease
As with other financial, legal or operational agreements between the landlord and tenant, it is important that green initiatives are properly structured within the lease. The Green Lease Provision Database provides the user with examples of lease language and concepts (sample provisions relating to building certification, transportation, water use, energy use, maintenance, and recycling are provided) as they pertain to a user’s particular occupancy situation (single tenant vs. multi tenant) or specific objectives (energy utilization, recycling, etc). These lease provisions are not intended to be used without the input of a qualified attorney who is experienced in commercial leasing matters.

An excerpt from the Green Leasing Toolkit is provided in Appendix A. The toolkit is also available online at www.sustainca.org/content/green_leases_toolkit.
4 THE STATE OF CALIFORNIA’S LEASED OFFICE PORTFOLIO

The state of California is a major landowner, with ownership interest in more than 6.7 million acres of land and nearly 23,000 structures containing over 212 million ft\(^2\). The state’s ownership is vested mainly in land and buildings that are considered of strategic importance and are likely to be owned indefinitely, such as educational establishments, correctional facilities (e.g., state prisons), and parks.

The state also leases substantial amounts of commercial space in California to support the provision of its public services. With a portfolio comprised of approximately 2,400 leases exceeding 21 million ft\(^2\), the state is one of the largest tenants in California.

In 2004, Governor Schwarzenegger issued Executive Order S-20-04 directing state agencies to take actions to reduce energy consumption in state facilities by 20% by 2015. This Executive Order, known as the Green Building Initiative (GBI), directed state agencies to implement cost effective energy efficiency measures and distributed generation technologies that could achieve that goal. Actions encompassed all types of facilities occupied by state agencies, both owned and leased.\(^{31}\) The GBI was accompanied by a Green Building Action Plan (GBAP) that established a Green Action Team comprised of leaders of the key state agencies needed to implement the Plan.

Within the State and Consumer Services Agency resides the California Department of General Services (DGS), the front-line agency charged with implementing the Governor’s Green Building Initiative through the Green Building Action Plan (GBAP). In addition to establishing criteria for greening properties owned by the state, the GBAP established guidelines requiring that DGS give preference to ENERGY STAR® rated buildings for leases of 5,000 ft\(^2\) or more in size. These guidelines took effect in 2006 for new leases, and in 2008 for renewals.

While some state agencies directly handle their own leasing, most of the state of California’s leased office space is managed by the Department of General Services (DGS), a department of the State and Consumer Services Agency (SCSA) and the state’s business manager. DGS performs these services through its Real Estate Services Division (RESD), a full-service real estate organization that assists its clients (state agencies) in asset management and planning, property sales and acquisition, project management, architectural and engineering services, leasing and planning, property management and building maintenance, construction management, energy efficiency and supply programs, and environmental assessments.

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DGS presently manages over 24 million ft$^2$ of space in state owned or managed facilities. Its major capital outlay, special repair, and minor capital outlay projects encompass almost 1,200 projects valued in excess of $4.2 billion.32

Approximately 16.1 million ft$^2$ of the state’s leased properties are office space and related facilities. The remaining 5.3 million ft$^2$ are warehouses and other specialty use facilities. Lease sizes range from small (600 leases are for requirements less than 5,000 ft$^2$ in size) to very large (15 leases are for spaces greater than 100,000 ft$^2$). Total annual rent for leased space amounts to over $429 million.

The Alliance reviewed the state of California’s portfolio of leased office space with the following primary objectives:

- To pilot-test the Green Leasing Toolkit,
- To recommend strategies for greening DGS’ portfolio of leased office space, and
- To identify opportunities for accelerating transformation of California’s commercial office lease market to “green”.

The following sections describe the Alliance’s process, analyses, findings and recommendations with respect to greening DGS’ lease portfolio. Recommendations for transforming the California real estate market through accelerated green leasing are provided in Chapter 6.

**Step 1 – Portfolio Characterization**

The Green Leases Toolkit process presumes that a real estate portfolio already exists that is being evaluated for greening. The process therefore commences with portfolio characterization (i.e., analysis of existing leases in existing buildings).

In order to conduct the portfolio characterization, in June 2008 the Alliance requested an extract of leased commercial office space from DGS’ database of leased properties. This request resulted in 1,679 records. From this extract, 1,269 records were found to apply to leased offices, warehouses, laboratories, or other similar types of facilities. The database provided the following fields:

- County
- City
- Agency
- Lease Number
- Address

32 [http://www.resd.dgs.ca.gov/default.htm](http://www.resd.dgs.ca.gov/default.htm)
The above fields provide only high level data about the leases and the properties. In order to use any database for identifying and prioritizing green leasing opportunities, additional information would be needed about both the lease transactions and characteristics of the leased properties.

In addition, imperfections in DGS’ database made it unsuitable for making any definitive conclusions or recommendations about DGS’ green lease opportunities. In order to establish a baseline understanding of the diversity of transactions in the DGS lease portfolio, the Alliance obtained copies of lease agreements for 51 properties and conducted field audits of 3 properties. The Alliance did not, however, attempt to research and resolve database imperfections which were beyond the scope of this study. Based on its limited review of portions of DGS’ database, the Alliance was able to make the following observations.

As of June 2008, approximately 76% (1,269) of the state’s 1,680 leases were for offices. These leases accounted for nearly 15 million ft², or 78% of the state’s total leased portfolio for commercial space.

Table 12. Types of Facilities Leased by the State

<table>
<thead>
<tr>
<th>Type of Facility</th>
<th>No. of Leases</th>
<th>Square Feet (ft²)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>% of Total</td>
<td>Number</td>
</tr>
<tr>
<td>Office</td>
<td>1,269</td>
<td>76%</td>
<td>14,862,433</td>
</tr>
<tr>
<td>Warehouse</td>
<td>165</td>
<td>10%</td>
<td>2,368,588</td>
</tr>
<tr>
<td>Storage</td>
<td>77</td>
<td>5%</td>
<td>197,041</td>
</tr>
<tr>
<td>Other</td>
<td>169</td>
<td>19%</td>
<td>1,708,952</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,680</strong></td>
<td><strong>100%</strong></td>
<td><strong>19,137,014</strong></td>
</tr>
</tbody>
</table>
DGS manages leased space for over 100 state agencies, but 10 agencies account for 60% of all leases and office space. DGS’ 3 largest leasing customers are the Departments of Corrections, Employment Development and Transportation that collectively account for 34% of all space leased by the state through DGS.

Table 13. The State Department of General Services’ Lease Clients

<table>
<thead>
<tr>
<th>State Agency</th>
<th>No. of Leases</th>
<th>Square Feet (ft²)</th>
<th>Average Lease Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>% of Total</td>
<td>Number</td>
</tr>
<tr>
<td>Corrections</td>
<td>139</td>
<td>11%</td>
<td>2,241,436</td>
</tr>
<tr>
<td>Employment Development</td>
<td>144</td>
<td>11%</td>
<td>1,591,887</td>
</tr>
<tr>
<td>Transportation</td>
<td>46</td>
<td>4%</td>
<td>1,193,727</td>
</tr>
<tr>
<td>Motor Vehicles</td>
<td>107</td>
<td>8%</td>
<td>724,559</td>
</tr>
<tr>
<td>Social Services</td>
<td>58</td>
<td>5%</td>
<td>662,990</td>
</tr>
<tr>
<td>Consumer Affairs</td>
<td>65</td>
<td>5%</td>
<td>639,391</td>
</tr>
<tr>
<td>General Services</td>
<td>52</td>
<td>4%</td>
<td>631,924</td>
</tr>
<tr>
<td>Justice</td>
<td>53</td>
<td>4%</td>
<td>583,554</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>76</td>
<td>6%</td>
<td>381,036</td>
</tr>
<tr>
<td>Industrial Relations</td>
<td>49</td>
<td>4%</td>
<td>372,732</td>
</tr>
<tr>
<td>Other</td>
<td>480</td>
<td>38%</td>
<td>5,838,197</td>
</tr>
<tr>
<td>Total</td>
<td>1,269</td>
<td>100%</td>
<td>14,862,433</td>
</tr>
</tbody>
</table>

The state’s leased office portfolio is concentrated in major real estate markets, with ten counties containing 70% of the leased office sites and 85% of the leased floor space. Sacramento, home for many state agency headquarters, accounts for nearly half (7.1 million ft²) of the state’s leased office space, with 298 leases averaging just under 24,000 square feet per lease. Leased office space outside of the major metropolitan areas tend to be smaller in size, with the 389 leases outside of the top ten counties having an average size just under 5,500 square feet.

Table 14. State Leases for Office Space by County

<table>
<thead>
<tr>
<th>County</th>
<th>No. of Leases</th>
<th>Square Feet (ft²)</th>
<th>Average Lease Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>% of Total</td>
<td>Number</td>
</tr>
<tr>
<td>Sacramento</td>
<td>298</td>
<td>23%</td>
<td>7,128,534</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>212</td>
<td>17%</td>
<td>2,011,071</td>
</tr>
<tr>
<td>Orange</td>
<td>58</td>
<td>5%</td>
<td>718,226</td>
</tr>
<tr>
<td>Fresno</td>
<td>52</td>
<td>4%</td>
<td>587,980</td>
</tr>
<tr>
<td>San Diego</td>
<td>63</td>
<td>5%</td>
<td>572,850</td>
</tr>
<tr>
<td>Yolo</td>
<td>32</td>
<td>3%</td>
<td>521,469</td>
</tr>
<tr>
<td>San Bernardino</td>
<td>58</td>
<td>5%</td>
<td>451,014</td>
</tr>
<tr>
<td>San Francisco</td>
<td>30</td>
<td>2%</td>
<td>365,961</td>
</tr>
<tr>
<td>Riverside</td>
<td>38</td>
<td>3%</td>
<td>197,169</td>
</tr>
<tr>
<td>Kern</td>
<td>39</td>
<td>3%</td>
<td>190,194</td>
</tr>
<tr>
<td>Other</td>
<td>389</td>
<td>31%</td>
<td>2,117,965</td>
</tr>
<tr>
<td>Total</td>
<td>1,269</td>
<td>100%</td>
<td>14,862,433</td>
</tr>
</tbody>
</table>

46
**Step 2 – Establish Green Criteria**

The Governor’s Green Action Team has directed DGS to seek ENERGY STAR® leases for spaces over 5,000 ft². The following section describes DGS’ leasing process and the points in that process in which the search for “green” space and terms are integrated.

**The State’s Standard Leasing Practice**

DGS has included provisions in its standard lease with the goal of promoting standardization in its green leasing practices. The state’s lease agreement consists of the following primary elements:

- Lease Agreement (state “Standard Lease Form”)
- Exhibit A: Interior Space Plan
- Exhibit B: Outline Specifications (performance specification for the alterations)
- Exhibit C: State Fire Marshal, CBC/ADA Access Compliance & Sustainable Measure Procedures

The State’s green lease provisions are primarily established in both Exhibits B and C of the standard lease document which can be found in Appendix B of this report.

**Exhibit A**

Exhibit A contains the final plan of the leased premise.

**Exhibit B**

Exhibit B of the DGS lease is entitled “Outline Specifications”. This is a 55 page document that details the State’s performance specifications for new construction, alterations and existing buildings. The specifications relate to building standards, materials and systems. The specifications are renewed from time to time and have evolved over the years to reflect changing compliance standards and the State’s goals in relation to its leased real estate. In March 2009, DGS Leasing management advised that this document is currently being revised by a specification writer consultant to incorporate LEED®-CI Silver construction criteria. Once completed in 2009/2010, DGS intends to construct most future tenant improvements to this level.

**Exhibit C**

Exhibit C of the standard lease is entitled “State Fire Marshal, CBC/ADA Access Compliance & Sustainable Measure Procedures”. This exhibit was introduced in 2002 and outlines requirements for compliance with State Fire Marshal, California Building Codes, Americans with Disabilities Act and Sustainable Measure Procedures.

The purpose of the sustainability component of this exhibit is to provide the means for the landlord/owner to report on compliance with the sustainability measures detailed in Exhibit B. To facilitate this, a Sustainable Measures Report is provided, which requires the landlord to
quantify where sustainability criteria were met. The landlord is required to send the completed form to the RESD space planner prior to occupancy and acceptance of the space.

The state currently utilizes a form of a green policy document through Exhibit C of their standard lease document. An example of the document is provided in Appendix B and can also be found at [http://www.resd.dgs.ca.gov/Branches/PSB/LeaseRequirements.htm](http://www.resd.dgs.ca.gov/Branches/PSB/LeaseRequirements.htm).

**Step 3 – Negotiate**

**Green Lease Characteristics**

Several factors are of particular importance to large tenants in identifying priority green lease opportunities.

- *Amount of Leased Space* (% of total building) in any particular building
- *Lease Term* (e.g., the length of time that the state commits to lease space)
- *Lease Type* (full, partial or un-serviced)
- *Vintage* (i.e., the year the building was placed in-service)

Each of these factors is discussed below.

**Amount of Leased Space**

The amount of space leased by the state in any particular building, whether by one or more state agencies, is an important indicator of leverage. Simply put, tenants who lease the majority of square footage of a building typically have much more flexibility in the lease negotiation than smaller tenants.

To understand the amount of leverage the state may have in any particular building, we analyzed the lease data in the extract from DGS’ database. The DGS database included air monitoring stations, car ports and parking lots. Where these facilities were not readily identified as part of an office building or warehouse, they were excluded from this analysis. In addition, some records did not have the number of square feet for the structure itself. Others had a total number of square feet for the structure, but the sum of square footage in total leases at that address exceeded the square footage recorded in the database for the structure itself. To enable computing the percentage leased by the state in any particular building, the database was adjusted to exclude records for which this computation could not be performed.

After adjusting the database, 1,072 leases remained in 816 unique addresses. We then stratified the adjusted database by the total size of each unique address to identify the percentage of the property that was leased by the state. The adjusted database reflected the following distribution of leases:
• The state is a major tenant in 26.4% of its leases in the adjusted database, leasing more than 75% of a building’s total rentable area. These 283 leases in 269 unique properties account for 5.6 million square feet, about 44.7% of total space leased for the records for which this computation could be performed.

• For nearly 50% of the leases reviewed, however, the state is a minority tenant, leasing less than 25% of a building’s rentable area.

Table 15. Distribution of State Leases by Amount of Building Occupied by the State

<table>
<thead>
<tr>
<th>% State Occupancy</th>
<th># of Unique Addresses</th>
<th># of Leases</th>
<th># of Leases as % of Total Leases</th>
<th># Square Feet Occupied</th>
<th>#Square Feet as % of Total Square Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 25%</td>
<td>347</td>
<td>508</td>
<td>47.4%</td>
<td>2,727,507</td>
<td>21.6%</td>
</tr>
<tr>
<td>25%-50%</td>
<td>130</td>
<td>189</td>
<td>17.6%</td>
<td>2,376,335</td>
<td>18.8%</td>
</tr>
<tr>
<td>50.1%-75%</td>
<td>70</td>
<td>92</td>
<td>8.6%</td>
<td>1,887,670</td>
<td>14.9%</td>
</tr>
<tr>
<td>&gt;75%</td>
<td>269</td>
<td>283</td>
<td>26.4%</td>
<td>5,647,839</td>
<td>44.7%</td>
</tr>
<tr>
<td>Totals</td>
<td>816</td>
<td>1,072</td>
<td>100.0%</td>
<td>12,639,351</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

From the perspective of leverage, the state likely has the best opportunity to affect green design and measures in the 269 buildings (283 leases) in which it rents more than 75% of the total building space. The state also has significant leverage in the additional 70 buildings (92 leases) in which it leases more than 50% but less than 75% of the total building.

The amount of space alone, however, does not determine the amount of leverage. Other factors, such as client requirements, lease term and lease type also needs to be considered.

**Lease Term**

For the majority of its lease requirements, DGS implements a 4-year fixed-term gross lease. This lease term structure allows compliance with California Government Code Section 13332.10 which stipulates that the California Legislature must review and approve proposed lease agreements with a firm lease period 5 years or longer.

According to DGS Leasing, the primary purpose of shorter fixed term leases is to provide maximum flexibility to the state, enabling quicker exit from lease agreements when space is no longer needed by the client agency. That flexibility is deemed particularly critical today, with the state’s budget crisis coinciding with global financial and credit challenges. In the event that state services are reduced, the need for space will also decrease. By reducing the length of the lease commitment, the state gains the ability to exit from existing leases more quickly and without penalty. There are both costs and benefits to a strategy of this type. From the perspective of green leasing, a shorter lease term is usually a cost, not a benefit, since landlords are less likely to agree to major retrofits of existing buildings where their investments in such retrofits are not likely to be recovered within the lease term. The paybacks on most core-and-shell types of retrofits exceed 4 years.
DGS’ current standard practice is to enter into 4-year fixed or “hard” initial terms with “soft” (i.e., flexible renewal) terms thereafter. The following table illustrates the distribution of “hard” vs. “full” terms observed in the state’s lease portfolio through the database extract that was provided to the Alliance in June 2008.

Table 16. Distribution of State Leases by Lease Terms

<table>
<thead>
<tr>
<th>Lease Terms</th>
<th>Hard Term</th>
<th>Full Term</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># of Leases</td>
<td># Square Feet Occupied</td>
</tr>
<tr>
<td>&lt;4 years</td>
<td>99</td>
<td>1,447,985</td>
</tr>
<tr>
<td>4-6 years</td>
<td>748</td>
<td>7,491,927</td>
</tr>
<tr>
<td>&gt;6 years</td>
<td>222</td>
<td>5,375,152</td>
</tr>
<tr>
<td>Totals</td>
<td>1,069</td>
<td>14,315,064</td>
</tr>
</tbody>
</table>

“Hard” Term refers to the portion of the lease term that is “firm”, or irrevocable.

“Full” Term is the maximum lease term stipulated in the lease agreement if the state does not terminate at the end of the hard term.

In general, efficiency measures that can pay for themselves within the firm lease term are likely candidates in a green lease negotiation. Lighting retrofits are the most common of the types of cost-effective measures that can pay for themselves within that timeline. Central heating and air conditioning systems, retrofits to the building envelope, and other types of core-and-shell retrofits are the most difficult to cover through lease negotiations.

The below graph illustrates the distribution of the lease terms in DGS’ portfolio vs. leased square feet.

Figure 9. Distribution of Leases by Firm & Total Lease Terms to Size of Leased Space
The following graph illustrates the distribution of lease terms by size of building in which the state leases space.

**Figure 10. Distribution of Leases by Firm & Total Lease Terms to Size of Building**

![Graph showing distribution of leases by firm and total lease terms to size of building.]

**Lease Type**

Lease type, or the type of expense clause, is another important indicator of green leasing potential. As discussed earlier in this report, whether a lease is “gross” or “net” defines the responsibilities of the landlord and its tenants for utilities, taxes, insurance, and other operating expenses. Each type of lease lends itself to a different set of green leasing strategies.

The DGS portfolio has three primary types of leases.

- **A full-service lease** is similar to a gross lease in which the landlord is responsible for providing and paying for the utilities to the building. The utility costs are part of the lease payment. The relevance of this type of lease from a green leasing perspective is that energy-savings (i.e. lower utility bills) that may result from building upgrades will benefit the landlord directly, and will only benefit the tenant if the gross rent is reduced. The landlord should be extremely motivated to reduce operating costs in these types of leases.

- **An unserviced lease**, also known as a net lease, is one in which the tenant is responsible for paying for the utilities. From the perspective of green leasing, unserviced leases present a split-incentive problem, since the landlord would need to pay for any energy-saving building upgrades but the tenant would benefit from lower utility bills. As noted
in Chapter 3, however, if a landlord and tenant are willing, net leases can be amended to allow tenants to contribute towards building energy efficiency upgrades that benefit the tenant through reduced operating costs.

- **Partially-serviced leases** are those where the building’s operating expenses are split between landlord and tenant. For instance, the landlord may pay all operating expenses except electricity. These cases are similar to a net lease structure since the tenants will directly receive the benefit of reduced operating expenses through green investments.

A review of DGS’ database indicated that 83% of its leases (representing 81% of the state’s total leased space) are full service or partially serviced in which the utilities are the responsibility of the landlord. These are essentially gross lease structures.

Only 17% of the leases are unserviced or partially serviced leases in which the utilities are the responsibility of the tenant. These are modified-net lease structures with regards to the payments of electricity costs.

<table>
<thead>
<tr>
<th>Lease Type</th>
<th>No. of Leases</th>
<th>Square Feet (ft²)</th>
<th>Average Lease Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Number</td>
<td></td>
</tr>
<tr>
<td>Full Service</td>
<td>797</td>
<td>10,192,297</td>
<td>12,788</td>
</tr>
<tr>
<td>Partially Serviced (No Janitorial Service)</td>
<td>30</td>
<td>139,341</td>
<td>4,645</td>
</tr>
<tr>
<td>Partially Serviced (No Utilities)</td>
<td>162</td>
<td>2,647,691</td>
<td>16,344</td>
</tr>
<tr>
<td>Partially Serviced (Other)</td>
<td>225</td>
<td>1,592,512</td>
<td>7,078</td>
</tr>
<tr>
<td>Unserved</td>
<td>55</td>
<td>290,592</td>
<td>5,283</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,269</strong></td>
<td><strong>14,862,433</strong></td>
<td><strong>11,712</strong></td>
</tr>
</tbody>
</table>

The type of lease may point to green leasing opportunities. However, as noted previously, any opportunity is characterized by multiple factors. In the state’s case, as a matter of policy, the preferred lease type is full service.

According to DGS Leasing, its standard requirement for “gross” leases – i.e., lease rates that include all utilities, operating costs and other services – is designed to mitigate economic risks to the state in times of cost volatility. True gross leases such as those utilized by the state are not common in today’s real estate market, since most landlords seek to assure that increases in operating costs, insurance and taxes are passed onto tenants. Faced with this requirement, an owner typically seeks to mitigate risks of increased costs by incorporating a premium into the fixed lease amount to cover the economic impacts of unknown future events.

Gross lease structures create a split incentive circumstance in which the economic benefits of energy efficiency improvements accrue to the landlord. In the state’s case, the standard lease type is full service. The Alliance reviewed a sampling of DGS full service leases. Utilities were included in the total rent payments. For these types of leases, unless the terms are renegotiated,
the tenant (state) has no economic incentive to invest in retrofits that may reduce a building’s energy or water use.

**Vintage**

A building’s vintage is another important indicator of potential energy efficiency and other “green” potential. Ideally, it would be very useful to include information regarding a building’s history of major renovations and/or retrofits in the lease portfolio management system. However, that type of information was not available through DGS’ database.

The below figure illustrates the distribution of the age of office buildings in which the state currently leases space as recorded in DGS’ database.

![Figure 11. Distribution of State Leases by Building Vintage](image)

The majority of the state’s leases are in buildings that were built in the 1980s. It was not possible to determine from DGS’ database whether these buildings have been updated since the original construction. In general, unless a major retrofit has occurred within at least the past 7 years, buildings of this vintage are likely candidates for major building upgrades.
**Step 4 - Monitor & Report**

The below description of the DGS lease process was provided by the management of DGS Leasing.

**The DGS Lease Process**

The process typically starts with an agency determining that it needs additional space or needs to renew an existing lease.

1. The Agency submits a request for space using the state’s online CRUISE system.
2. The request is reviewed by DGS Asset Management to determine whether the request can be accommodated within existing or planned state buildings in the locality.
3. Upon determination that leased space is needed, the request is then forwarded to Real Estate Leasing and Planning (RELPS) regional unit managers at DGS (there is one each for South, North, Central and Sacramento Regions). The Regional Leasing Manager and Planning Manager then assign the project to a Leasing Officer and Planner.
4. The real estate officer and planner hold a kick-off meeting with the agency to define its specific needs. The amount of total space required is based on a formula of allowable space (ft²) per employee established by the State Administrative Manual (“SAM”). Space allocations vary with employee classification. The team also reviews the location/site search area requested of the client to make sure it meets the client’s (state agency’s) mission-critical needs and provides sufficient competition in the market. (For example, Department of Motor Vehicle (DMV) and California Highway Patrol (CHP) field offices must be located within certain areas to serve their clients and stakeholders.)
5. DGS then advertises the requirement to real estate owners and agents. State requirements are listed in the advertisement. Buildings submitted must:
   a. Be asbestos hazard-free upon occupancy;
   b. Accommodate state plans, specifications, seismic safety, Americans with Disabilities Act (ADA), and applicable codes (California Building Code & Title 24);
   c. Be close to public transportation; and
   d. Comply with Disabled Veteran Business Enterprise (DVBE) requirements.

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33 Interview with Patrick Foster, Assistant Chief of DGS’ Real Estate Leasing and Planning Section on November 21, 2008. Updated by George Carollo, DGS Senior Real Estate Officer, in March 2009.

The advertisement states that “The State of California will, where cost effective, give preference to those buildings which demonstrate ENERGY STAR® compliance and or LEED® Certification. Please refer to http://energystar.gov for further details.”

6. After submittals are received, DGS screens submittals to be sure they meet or will meet all state requirements including ENERGY STAR®. DGS then conducts site visits with its client.

7. After deciding on the approved sites, landlords are requested to submit a proposal. DGS negotiates the rates and terms, and ensures that the landlord complies with all requirements prior to occupancy.

**The Role of State Agencies**

- The level of support for sustainability varies from department to department.
- California Government Code says the building needs to have a recycling program. In leased facilities, the program is administered by the occupying state agency.
- The “green” decision is not necessarily the Agency’s. Ultimately, the type of building and the percentage of leased space determine how much leverage the state has over the owner.

**Financing**

- The state prefers “an efficient building that is cost-effective”.
- For state-owned buildings, life cycle cost is the standard. The Department of Finance (DoF) requires that a cost-benefit analysis be provided that substantiates claims that incremental investments in green design elements will actually be cost-effective on a life cycle basis.
- For leased space, the Client (State Agency) submits a form to DoF estimating all costs (turn-key rents inclusive of all improvements, plus all furniture and equipment). DGS provides a projected rent based on a preliminary market analysis. This then sets the ceiling for the lease budget. The market analysis is based on the expected lease term. If, during the lease process, the cost is higher than the estimated budget, the Client must go back to DoF for authority to proceed.

**Tenant Improvements (TI)**

- DGS generally seeks market deals with Tenant Improvements included.
- Common sense is applied in the interpretation of the Exhibit B specifications, based on a case-by-case review of the costs and benefits. For example, the specification requires flexible duct work in parts of the mechanical systems. However, DGS utilizes existing infrastructure where cost-effective as long as it meets the performance intent.
- The sustainability measures form in Exhibit C was developed internally more than five years ago.
• DGS is currently in the process of updating its specifications to the “next generation” with the goal of achieving LEED®-CI on future leases.

**Challenges to Greening the State’s Lease Portfolio**

During the course of its efforts to comply with the GBI green lease specifications, DGS encountered several significant challenges.

**Insufficient inventory of ENERGY STAR® rated buildings**

The compliance benchmark or green criteria established by the GBI and GBAP is ENERGY STAR®. Although the inventory of ENERGY STAR® rated buildings is higher in California than in other states, ENERGY STAR® rated buildings are scarce in places where the state is most often seeking office space – small to mid-sized markets throughout California.

As noted previously, as of April 2009, only 1.2% of commercial buildings in California accounting for 12.4% of the total office space were ENERGY STAR® rated. To-date, there has been little incentive for building owners to incur the time and expense needed to go through the ENERGY STAR® certification process.

DGS Leasing stated that many buildings currently occupied by the state are likely already high performing buildings since (a) the state’s requirement for full ADA compliance often results in securing space that is of fairly recent vintage; (b) California’s aggressive Title 24 codes are the highest in the nation and newer buildings are very efficient; and (c) the state’s tenant improvement (TI) specifications regarding energy efficiency establish a high threshold.

**First Costs remain challenging**

Despite many discussions with the Treasurer, Pollution Control Financing Authority, Department of Finance, legislature, and others, the first cost of energy efficiency retrofits remains a significant hurdle.

Like all public entities, state departments are pressured to keep their budgets as low as possible and face the possibility of budget cuts every year. Initial cash outlays for energy efficiency

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35 CoStar’s database indicates that April 2009, there were approximately 164 million square feet of ENERGY STAR® certified office buildings in the state. Of this amount, 84% were in Class A office buildings.

36 The cost of ENERGY STAR® certification alone is modest, ranging from as low as $1,000 to a high of $5,000 per building. This cost does not, however, include the upgrade work required if the building is performing below the ENERGY STAR® certification standard of 75.

37 One of the 3 properties selected by the Alliance for field audit was found to be qualified for an ENERGY STAR® rating of 75. The property is a 100,000 square foot building that was placed in service in 2000.
investments compete with other critical functions for funding. In addition, the current constraints on capital markets are likely to impact the ability to be updating buildings. It is very difficult under those circumstances to obtain authorization to make investments that are expected to pay for themselves over future years.

Although the state now integrates consideration of life cycle costs into assessments of state investments, sources of capital must still be identified for investments in long-term assets, whether these are for equipment or for building retrofits. In this respect, the state is no different from any other public or private organization – decisions to commit cash to long-lived assets that will return benefits over multiple future years must be weighed in context of the organization’s overall priorities for funds.

**Green Lease Negotiations Add Time and Costs**

Like most public entities, DGS is resource-constrained. Green leasing is an emerging best practice for which no “standard green lease transaction” yet exists. As a consequence, each negotiation is unique. Customizing a green leasing package for each transaction adds time and costs to the lease process.

Since “green” is still a fairly new concept to both landlords and tenants, there are few “standard” practices that can be relied upon, requiring a learning curve for all parties to the transaction: DGS, its customers (state agencies), building owners and landlords, contractors, property managers, and real estate brokers.

**The 4-year fixed term reduces the inventory of cost-effective measures**

The determination of “cost-effectiveness” is a function of the recovery of the initial capital investment through reduced operating expenses over a period of time – referred to as the “payback period”. Some energy efficiency and sustainability measures have paybacks of four years or less; however many higher benefit technologies (especially HVAC and other core-and-shell improvements) typically have paybacks that exceed the lease term. Although the state may renew its leases and continue to occupy its space far beyond the initial lease term, depending on the requirements of the various occupying agency, it is difficult to make a decision to invest in these types of retrofits since recovery of the investment – whether by the landlord or by the tenant - cannot be assured.

**Findings and Recommendations**

The findings and recommendations herein were developed by the Alliance technical team in consultation with its Green Buildings Advisory Committee and other real estate professionals. In preparing this section, the Alliance relied on the collective real estate industry experience brought by members of its technical team, its Green Buildings Advisory Committee and the Green Leases Toolkit as a framework for identifying opportunities and strategies for greening the state’s lease portfolio.
The Alliance’s review indicated that DGS already integrates the following best practices into its leasing process.

- DGS has a clearly articulated policy and goals that were determined by the Governor’s Green Building Executive Order S-20-04 [2004], the accompanying Green Building Action Plan, and the California Global Warming Solutions Act of 2006 [Assembly Bill 32].
- Tools and templates such as Exhibits B and C of the standard lease were developed and are being used by DGS Real Estate Leasing Managers to facilitate the implementation of sustainable practices through the leased portfolio.

Additional processes are recommended for DGS to demonstrate a leadership position in this evolving market to transform DGS’ lease portfolio to “green”. Below is a summary of the Alliance’s recommendations.

**Finding 1: There are Some High Potential Near-Term Opportunities.**

Through its review of DGS’ lease database, the Alliance identified the following portfolio characteristics that are significant to identifying green leasing opportunities and strategies.

- The state leases more than 75% of the building in approximately 283 leases (representing nearly 45% of total portfolio square footage).\(^{38}\) The state should have significant influence within these leases.
- Approximately 35% of the state’s leases are net leases. Of this, it appears that for at least 162 leases accounting for 18% of space leased by the state, utilities are paid directly by state agencies. For these types of leases, the state will directly benefit from energy efficiency retrofits through reduced operating costs.\(^{39}\)
- Sixty percent (60%) of the portfolio’s square footage can be addressed by working with 10 state agencies.
- Similarly, forty percent (40%) of the state’s leases can be addressed by focusing on leases and landlords in Sacramento and Los Angeles.

These characteristics point to potential strategies for greening the state’s lease portfolio.

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\(^{38}\) This estimate is based on the data for 1,072 leases for which the building size was available (see Table 15 Distribution of State Leases by Amount of Building Occupied by the State).

\(^{39}\) This estimate is based on DGS’ classification of 1,269 leases (see Table 17 Distribution of Leases by Lease Type).
Recommendation 1a: For the near-term, the state should focus its limited resources on the 283 leases in which the state has significant leverage as a majority tenant, and on the 35% net leases in which the state receives economic benefits from energy efficiency retrofits through reduced operating costs. The state can use its leverage as the majority tenant to insist on ENERGY STAR®, regardless of underlying lease structure and any issues of split-incentives.

Recommendation 1b: Concurrently, the state should make concerted efforts to engage owners of buildings occupied by state agencies in Sacramento and Los Angeles. AB1103 presents an opportunity for obtaining building energy consumption data to facilitate the state’s assessment of its energy and carbon footprint through leased operations. This is particularly important because the state agencies that are tenants separately pay utility bills under net lease agreements. Consequently, where the state has more than one lease in a building, the state cannot “see” it’s true cost for utilities in that building without establishing a separate system to collect and compile the operating costs of multiple state agencies under multiple leases.

Recommendation 1c: A pilot for more effectively engaging DGS’ clients, state agencies, in the green leasing process should be implemented with the 10 state agencies that account for 60% of the state’s leased space.

Finding 2: The DGS Due Diligence Process Should Include a Sustainability Score.
California’s real estate market leaders are beginning to benchmark their buildings and report their sustainability scores to prospective buyers and tenants (see Figure 7, Example of a Green Building Environmental ScoreCard). Further, while Assembly Bill 1103 does not specifically require that landlords provide building energy performance data to all prospective tenants, the requirement that utilities collect and upload monthly energy consumption to ENERGY STAR® Portfolio Manager will increase the likelihood that this data will be readily available upon request.

Recommendation 2a: The state should request a building’s Sustainability Score and/or ENERGY STAR® rating as a condition of leasing space, irrespective of the type of lease. The DGS should include a sustainability ‘score’ in the due diligence scorecard that brokers and the DGS use to compare alternative space options at both new acquisition and lease renewal. Brokers should be educated on the state’s green requirements, use of due diligence scorecard, required standard of analysis of green options, etc.

The state and all tenants should insist on having this type of information prior to making a lease commitment so that they can include consideration of a building’s energy performance in their life cycle assessments. Even though the state may enter into a gross lease that includes utilities, the landlord’s operating costs ultimately factor into the lease rate. An understanding of the building’s operating costs provides a basis for negotiating potential retrofits that could improve the building’s performance and reduce the state’s lease rate; or at least, could provide an opportunity to facilitate a partnership between the building owner and utility service providers.
to implement retrofits that will increase the asset value of the property while reducing the landlord’s operating costs and achieving resource and environmental benefits for the state.

**Recommendation 2b**
In the event no qualified green space is competitively offered, the state should favor offers committing to a plan to reduce the environmental footprint of the facility during the lease term.

**Finding 3: The Current Leasing Process Needs Transparency and Accountability.**
The current leasing process lacks transparency as to how green requirements are traded against financial, agency and other requirements during lease selection and negotiation. This information would provide valuable information to the state’s policymakers about barriers to green leasing, and help to develop policies, programs and strategies for overcoming these barriers.

In addition, agencies should be held accountable for helping DGS develop and implement green specifications for their leased space. State agencies should be required to include the energy and carbon impacts of their operations in leased office spaces in their annual reports of GHG reduction.

**Recommendation 3a:** A system should be established for tracking and reporting on the effectiveness of the state’s green leasing efforts.

**Example:**
1. At the start of the renewal of an existing lease or negotiation of a new lease, conduct a baseline green survey of existing space.
2. Compare to DGS’ green target checklist for the specific type of space and identify upgrades required to bring space up to DGS’ minimum green specifications for space of that type.
3. Track negotiations for building and tenant space improvements through the on-line lease negotiation diary to be maintained by each leasing officer and reviewed by DGS Leasing Management.
4. Report on variances from the minimum green specifications.
5. At the end of the leasing process, re-assess occupied space to ensure that tenant improvements were completed in accordance with the state’s specifications.
6. Enter the lease and space characteristics into the state’s Green Leasing Management Dashboard System (see Recommendation 3b).
All existing and new leases should be reviewed, characterized and properly coded for entry into a new system that includes all of the key data needed to facilitate effective monitoring and tracking of leasing operations and progress towards the state’s green leasing goals.40

**Recommendation 3b:** A sustainability dashboard reporting system41 should be implemented for DGS and its clients, state agencies, which creates transparency and accountability for the state’s real estate and operational choices.

**Finding 4: The State Should Consider Increasing Some Lease Terms.**

To mitigate financial risks, the state requires flexibility in its lease commitments. This is reflected in its standard lease provisions that provide for a short (4 year) fixed term during which the state cannot cancel, followed by 4 or more years of a “soft term” during which the state can cancel upon providing the requisite notice(s). Under the state’s standard lease provisions, the state is not required to renew the lease until the full term has been served.42 The

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40 There are a number of existing contract management systems designed specifically for managing real estate or other large asset portfolios that could be adapted to this purpose. In addition, information about property owned and operated by the state could be included in the same system, allowing management to view the state’s entire real estate portfolio, both owned and leased, through a single fully integrated management dashboard.

41 A sustainability dashboard would include key green lease metrics such as: energy and water use, costs and intensity; carbon and other types of emissions, total and intensity; checklist compliance; etc.

42 In other words, the lease is deemed to continue until the state provides notice of intent to cancel or the full contractual lease term is reached, whichever comes first.
length of the full and firm terms tended to be longer in situations where the state occupies a large percentage of the building.

The potential to green any particular office space is highly dependent on the structure of the lease itself. DGS’ standard lease terms - 4 year fixed term, full service – are not optimal from the perspective of green leasing negotiating leverage. A review of DGS’ database of 1,269 leases for office space shows, however, that the actual lease terms average about 9.5 years. Especially in Sacramento where many state agencies are headquartered, some spaces have been occupied for 20 or more years. While the state’s preference for short-term leases is based on mitigation of financial risks, there is a cost (e.g., loss of green negotiating leverage, increased exposure to market rate increases, higher rate of lease transactions and costs, etc.) to this flexibility.

**Recommendation 4:** Identify leases for space that the state is highly likely to continue occupying for 7 or more additional years. Evaluate the costs vs. benefits of renegotiating these leases for longer terms and with a requirement for obtaining ENERGY STAR® rating or another acceptable “green” standard.

**Finding 5: Annual Lease Rollovers Provide Green Lease Opportunities.**

With a standard requirement for short-term leases, the state’s lease portfolio is very active, with a high volume of new leases and renewals (400 leases, about 25-30% of the lease portfolio) being (re-)negotiated every year. This high volume of activity presents opportunity for the greening of new leases and renewals, while concurrently deploying strategies to address existing leases mid-stream.

**Recommendation 5:** Minimize missed opportunities by establishing and implementing green goals, criteria, strategies, guidelines and training for greening new leases and lease renewals.

**Finding 6: Checklists, Manuals & Training are Needed**

The majority of the state’s landlords are small, non-institutional owners. Many do not have the resources or inclination to operate and maintain a building plant in accordance with best practices; nor are most building owners or property managers knowledgeable about the costs and benefits of sustainability measures. Further, many are not aware of the breadth of technical and financial assistance available through utility programs.

**Recommendation 6a:** The state should develop a “sustainable facility” policy and best practice manual that includes all aspects of improving, operating, maintaining and occupying leased space. This manual should be integrated with the standard lease specifications and should be relevant to both lessor and lessee.

**Recommendation 6b:** A checklist of common energy efficiency and sustainable measures showing the estimated payback period should be provided to brokers, leasing managers, building owners and property managers.
Recommendation 6c: The state should partner with utility service providers to implement programs that encourage the owners of its leased office space to achieve at least ENERGY STAR® rating (ENERGY STAR®’s minimum score to earn a building plaque is 75).
5 THE CASE FOR GREEN LEASING

While there is increasing evidence that substantial resource, economic and environmental benefits are achieved by green buildings, there is not yet a consistent, widely accepted method for tracking and reporting a building’s performance that allows meaningful comparison among various properties. Meanwhile, multiple organizations are capturing case studies about the costs and benefits of green buildings, both in the U.S. and internationally. In California:

- The California Integrated Waste Management Board (CIWMB), motivated in large part by reducing construction and demolition waste, dedicated a portion of its website to highlight examples of sustainable design and building techniques.43
- Flex Your Power, California’s statewide energy efficiency marketing and outreach campaign, cites green building examples in its “Best Practice Guide for Commercial Office Buildings.”44

Nationally, a number of organizations are attempting to capture and document the costs and benefits of green building projects.

- The U.S. Green Building Council tracks research conducted by itself and other organizations that document the costs and benefits of green buildings and LEED® certification.45
- The U.S. Department of Energy’s Office of Energy Efficiency and Renewable Energy (EERE) sponsors a “High Performance Buildings Database” that seeks to improve building performance measuring methods by collecting data on various factors that affect a building’s performance, such as energy, materials, and land use.46

Although there is not yet a single standard for reporting on the costs and benefits of green buildings, the building industry itself is taking steps to remedy these gaps. RS Means, North America’s leading supplier of construction cost information, has issued a “Green Building: Project Planning & Estimating” guide. In addition to providing information about green building design, materials, systems and standards, RS Means provides guidelines for energy efficiency modeling, life cycle evaluations, and health, comfort and productivity goals and techniques. In addition, the guide contains a separate chapter about sustainable

43 See CIWMB’s website: http://www.ciwmb.ca.gov/GreenBuilding/CaseStudies/.
46 See EERE’s website: http://eere.buildinggreen.com/.
deconstruction. Furthermore, RS Means includes green design elements, equipment and materials in its annual update of construction costs nationwide.

RS Means observed that the average additional cost quoted by architects and engineers for designing and building a LEED®-certified building typically ranges from 2% to 5%. This estimate is significantly different than early anecdotes that asserted LEED®-certification could add 5-15% or more to the cost of a new or retrofitted building. RS Means reported that the majority of observed incremental costs have been attributable to increased time needed to integrate sustainable building design and practices into projects, conduct energy modeling, perform commissioning or retro-commissioning, and the incremental cost of certification itself. These types of costs are expected to decrease as green becomes the new standard.

**Valuing Green Buildings**

As noted in Chapter 2, while the resource efficiency benefits of green buildings are well documented and understood, other types of value streams are not as readily or objectively measured. For example, indoor air quality and improved worker productivity have been observed and reported in some green projects. However, it is very difficult to measure and prove the value of these types of benefits. In addition, while there are increasing reports that green buildings are commanding higher market prices, it is often difficult to determine the actual contribution of a green rating or certification to a building’s sale price.

Some factors can, however, be objectively evaluated. While the “market value” of a commercial building is not directly related to its cost, a building that is greener and higher performing has significantly lower operating costs than a non-green building of comparable size, location, desirability and construction type. Consequently, the green building typically earns a higher appraised value for its higher expected performance.

In May 2008, the Appraisal Institute announced the launch of new coursework structured to specifically address the analysis and valuation of green buildings. This ground-breaking coursework, “An Introduction to Valuing Green Buildings,” premiered June 24, 2008 in Austin, Texas. The 7 hour seminar was structured to address sustainable building practices “from the

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49 The Appraisal Institute is a global membership association of professional real estate appraisers, with 25,000 members and 91 chapters throughout the world that is dedicated to advancing professionalism and ethics, global standards, methodologies, and practices through the professional development of property economics worldwide. The majority of Appraisal Institute members are practicing real estate appraisers and property analysts who provide valuation-related services to such clients as mortgage lenders, financial institutions, government agencies, attorneys and financial planners as well as homeowners and other individual consumers. For more information, see the Appraisal Institute’s website: [http://www.appraisalinstitute.org/about/](http://www.appraisalinstitute.org/about/).
ground up – from design principles to cost-benefit analysis to implications for the valuation process.”

The development and application of national industry standards for assessing and including green values in the appraised value of buildings will help to build credible data that can be used to objectively document and compare the market value of green vs. traditional buildings.

**The Role of Ancillary Markets**

A green building’s value is not determined solely by its market price. Building owners and tenants that embrace green leasing practices are likely to receive numerous benefits, including favorable insurance carrier underwriting consideration. For instance, owners of certified green buildings may be eligible for a property insurance discount. This discount recognizes that green building practices such as commissioning and integrated design reduce the likelihood of losses from electrical fires, HVAC system breakdowns, water intrusion and plumbing leaks. Tenants in green buildings may also receive insurance-related benefits because of the reduced likelihood of property, workers’ compensation and employee health claims.

Besides evaluating such “concrete” building characteristics as type of construction, fire protection and life safety systems, and operational hazards, insurance underwriters also consider indicators of business quality and safety attitude when making risk selection and pricing decisions. Favorable credit scores, financial stability, minimal loss history and a functioning safety program are some of those indicators.

Fireman’s Fund Insurance Company takes the viewpoint that owners who go through the effort and expense to construct or renovate a building to green standards are likely to be financially stable and conscious about the safety and well being of its occupants. Likewise, tenants who lease space in a green building are probably seeking more than just a roof over their employees’ heads.

While many factors are evaluated in the insurance underwriting process, the lower loss potential, enhanced operational and safety systems and management quality often found in green buildings give their owners and tenants a risk selection and pricing edge.

We view certified green buildings as indicators of good management. Low and no-cost measures indicate management’s willingness to commit. Commissioning addresses major loss problems, such as fires and HVAC. From a risk management perspective, “green” = good management = risk reduction.

*Stephen Greger, Director, Risk Services & Solutions, Fireman’s Fund Insurance Company*

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51 Stephen Greger, Director, Risk Services & Solutions, Fireman’s Fund Insurance Company.
The Need to Document the Green Building Value Proposition

Thomas S. Ricci, Executive Vice President of Thomas Properties Group, spoke to the Alliance about the need to systematically document the costs and benefits of green buildings and to educate brokers so that they can educate their tenants.

“Green sustainable buildings incur certain additional costs – energy modeling, commissioning and enhanced commissioning - that are not required for traditional buildings. Although each of these costs alone may be fairly modest, they ultimately add up.

“Another challenge: energy savings equate to dollars, but the way many leases are structured these days, those dollars cannot be captured by the developer. If you incur additional costs but you are not able to capture the savings and are not able to charge more for the space, how can you make it work?

“There must be more than anecdotal evidence in the market that green buildings are absolutely more energy efficient, more sustainable, higher performance buildings, and that they improve worker health, productivity and well-being. That will help to drive the market.

“Recently, real estate databases of properties across the country have started tracking the ENERGY STAR® and LEED® ratings of projects. Tracking these metrics will help to draw a better comparison between the values of certified green buildings vs. inefficient buildings that are not sustainable. That is what is needed to help the market understand that there is a value. Then, even if tenants are not willing to pay more for green, at least they will be more likely to stand firm on their preference for green.

“In our experience, tenants tend to stay longer in certified green buildings. The combination of longer term leases and the ability to lease up to a higher occupancy rate than other buildings that are not certified add value to the green real estate asset.”

Below are summaries of the green building benefits of two exemplary green buildings in California provided by the Thomas Properties Group. These and other successes need to be documented and shared with both landlords and tenants throughout California. Ideally, a consistent set of metrics for benchmarking every building’s energy, water and carbon performance should be applied and performance metrics posted in every public and commercial building.
A milestone in sustainable development, the Cal EPA building was the first LEED EB Platinum high rise built and has been recognized nationally, winning over 10 environmental awards since 2002. Thomas Properties Group (TPG) developed the building and has continued to successfully manage the day-to-day operations.

**Sustainable Highlights:**

- First LEED EB Platinum high rise in the US
- Building efficiencies save the tenant, the State of California, over $1.4 million annually in operating costs
- 52% reduction in overall water use
- 49% more energy efficient than the national average
- ENERGY STAR® labeled with a rating of 99

**Sample Operational Improvements:**

- Daytime janitorial services reduced energy consumption by 8% and realized annual utility savings of $100,000
- Heating and cooling technology improvements for total savings of $25,000 per year
- Waste management program diverts approximately 10 tons of waste from landfills per quarter at a savings of $50 per ton
• Elimination of garbage can liners in each office space eliminated $60,000 in annual purchases and use of reusable cloth bags in the centrally located recycling bins saves $20,000 per year

Sample Green Features:

• U.V. reflecting modular precast panels, energy efficient LED lighting, 12 inch deep solar shade overhangs, high performance glass
• High-efficiency chillers (basement)
• Recycled & renewable materials throughout
• Xeriscaped entry plaza
• Strategically located high-efficiency HVAC fans
• Low wall zones around perimeter for natural light
• 150 bicycle parking spaces & showers
• Tower oriented north/south minimizes heat gain
• Smoking policy
• Green cleaning program
• Recycling programs
City National Plaza consists of two 51 story high rise towers and plaza building equating to 2.5 million square feet located in downtown Los Angeles. Registered with the USGBC’s LEED EB program, City National Plaza is targeting LEED EB O&M Certification. Purchased in 2003 by Thomas Properties Group (TPG), the property has been in the process of a major redevelopment.

**Sustainability Highlights:**

- LEED EB O&M certification in progress
- ENERGY STAR® Partner - ENERGY STAR® rating 90 out of 100
- 40% more energy efficient than the national average
- Increased occupancy by 53% in the last five years while total electricity consumption has increased by only 3%
- City National Plaza now uses 35% less energy consumption on an occupied RSF basis
- Saved $5.1 million in electricity costs since 2004
- Building automation system (BAS) controls key building systems, reducing building energy & maintenance costs
- 20% reduction of indoor plumbing water use
- Transit oriented property diverting an average of 600 daily passengers to public transportation via its three environmentally friendly Natural Gas shuttle buses
- Target 75% diversion rate of construction waste from landfills
• Heat island reduction - 100% of parking spaces under cover
• High-performance filtration equipment increases indoor air quality

**Sustainability Policies and Programs in Place:**

• Building Exterior & Hardscape Management Plan
• Integrated Pest Management, Erosion Control, & Landscape Management Plan
• Refrigerant management program
• Sustainable Purchasing Policy
• Solid Waste Management Policies
• Green Cleaning Policy
• Smoking Policy in Place
6 SUMMARY OF FINDINGS AND RECOMMENDATIONS

The vast majority of office space that will be used in the year 2020 has already been built. Green leasing can be a key strategy for greening this existing space.

The goal of green leasing is not necessarily to abandon existing space to lease space in compliant buildings, but to encourage building owners and tenants to collaborate on means for maximizing energy efficiency and sustainability benefits in existing spaces. It is likely that not all existing space can be cost-effectively upgraded to a high performance standard. However, willing owners and tenants motivated to find the mutual benefits can collaborate on significantly improving the resource efficiency and environmental performance of California’s existing building stock.

The Green Leases Toolkit was developed to help building owners and tenants develop approaches for minimizing the energy, water and waste impacts of existing space. In some cases, moving out of existing space can incur greater environmental costs (e.g., energy, solid waste and transportation-related GHGs) than remaining in an existing space. The challenge (and part of the focus of the Green Leases Toolkit) is to create a meaningful dialogue between tenants and landlords that leads to implementing most of the cost-effective opportunities for greening the design and operations of existing office buildings.

Green leasing is complicated by the fact that green buildings are an emerging market in which policies, practices, codes and standards are still evolving. There are many market participants and too many different standards from which to choose. Consequently, some of the major barriers to green leasing that will need to be addressed do not apply solely to green leasing, but to the broader challenges of accelerating the development and implementation of new and existing green buildings, both leased and owner-occupied, in all markets.

With assistance from our expert group of Advisors, the Alliance identified the following principles for significantly accelerating green leasing in California.

1. Increase Demand for Green Buildings
2. Overcome Economic Barriers
3. Overcome Barriers to Green Leasing

The first principle, increase demand for green buildings, applies generally to all green buildings, leased and owned, new and existing. The most significant economic barrier, first costs, applies to any type of investment in capital improvements. However, split incentives are directly related to green lease transactions. The third principle, overcome barriers to green leasing, relate specifically to green leasing. These key principles and the strategies recommended to achieve them are described below.
### Table 18. Green Leasing Market Transformation Principles

<table>
<thead>
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<th><strong>INCREASE DEMAND-PULL</strong></th>
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| **Document the Green Building Value Proposition** | ▪ Adopt a common methodology for measuring, documenting & reporting on green building costs and benefits.  
▪ Require documentation of project costs and benefits, especially when public &/or ratepayer funds are used to help fund the retrofits.  |
| **Establish a Statewide Green Building Standard** | ▪ Establish statewide criteria for green buildings that are ambitious but still economically achievable.  |
| **Implement Building Labeling** | Transition AB1103 to full building labeling:  
▪ Make a finding that building labeling is in the public interest  
▪ Implement labeling statewide  
▪ Expand AB1103 disclosures  
▪ Apply a consistent statewide methodology for benchmarking a building’s resource and environmental performance  |
| **Leverage Market Power** | ▪ Assist the state’s largest owners and tenants in establishing and adopting a common set of minimum green criteria to send a clear message to the market that any new or retrofitted commercial office space in California must meet those criteria  
▪ Partner with energy and water utilities on whole building and portfolio approaches that streamline the greening of entire inventories of buildings  |
| **Leverage Ancillary Markets** | ▪ Provide education and training about green building characteristics, operations, costs and benefits, markets, green leasing tools and techniques, green portfolio strategies, etc.  
▪ Leverage licenses and license renewals to require training on the costs and benefits of green buildings and green real estate principles for all key market participants  |

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<th><strong>OVERCOME ECONOMIC BARRIERS</strong></th>
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| **Market participants: utilities, real estate & insurance brokers, appraisers, lenders** | ▪ Provide comprehensive utility services including financing  
▪ Establish separate programs for building owners vs. tenants  
▪ Provide enhanced incentives for whole building and/or whole portfolio Retrofits  
▪ Leverage AB1103 to encourage owners to maximize their ENERGY STAR® rating  |

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<tr>
<th><strong>OVERCOME BARRIERS TO GREEN LEASING</strong></th>
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| **Building owners, tenants, utilities, ESCOs, real estate & insurance brokers, appraisers, lenders and other market participants and stakeholders** | Open dialogues about the costs & benefits of potential green building retrofits, both core and shell and tenant improvements, to identify cost-effective opportunities  
Discuss how utility programs can help overcome economic barriers of first costs & split incentives  
Promulgate messages about green building costs & benefits and adapting products & services to the needs of building owners and tenants under different types of leases  |
**Increase Demand for Green Buildings**

Market forces are powerful. The climate action movement in particular has created a dynamic in which heightened interest and awareness in the environmental impacts of our built environment and operations can overcome most of the primary barriers to greening existing buildings. The following strategies are structured to work in concert to significantly increase demand for green buildings:

- Document the Green Building Value Proposition
- Establish a Statewide Green Building Standard
- Implement Building Labeling
- Leverage Market Power
- Leverage Ancillary Markets

**Document the Green Building Value Proposition**

The body of evidence that green buildings bring economic benefits to their owners and their tenants has grown exponentially over the past few years. However, there is need for consistent methods and approaches to documenting both the costs and benefits.

**Recommendations**

1. **Establish a consistent methodology** for evaluating the total resource costs and benefits (including direct and indirect economic, environmental, health, productive and societal costs and benefits) of green buildings. A consistent methodology will enable both tenants and buyers to compare the relative resource and environmental performance of various buildings to make informed choices. It will also facilitate development and implementation of effective policies and programs aimed at improving the performance of all buildings in California.

2. **Document the green building value proposition.** Many important projects that would serve as case studies are not being captured. Others may be viewed skeptically if they were not documented in accordance with “accepted” methods, nor independently verified. At a minimum, wherever public and/or ratepayer funds are used to fund all or a portion of a building’s retrofits, the project costs and benefits should be documented, reviewed for conformity with adopted measurement protocols, and the results captured in a database.

**Establish a Statewide Green Building Standard**

Many California local governments have adopted green building ordinances. While local government leadership is important, the diversity of green...
building criteria that have been established by various local governments is striking. Builders have testified extensively before policymaking bodies that the need to learn the unique requirements of each local government’s permitting rules and fees increases the complexity and cost of development.52 The significant diversity of green building ordinances among local jurisdictions is adding yet another layer of complexity, time and costs to the development and/or retrofit of commercial buildings.53

California recently adopted a statewide Green Building Standards Code known as “CalGreen” that will be launched for voluntary implementation in August 2009.54 CalGreen was designed to serve as a California-specific minimum standard that can be applied to all types of buildings, both new and retrofit. While CalGreen is designed to push the envelope in bringing green building practices to California’s real estate markets, local governments will be allowed to exceed the CalGreen standard. CalGreen is intended to be compatible with LEED®, ENERGY STAR® and other green building standards.

**Recommendation**

*Establish statewide criteria for green buildings* that are ambitious but still economically achievable. (When fully developed and implemented – presently targeted for end 2010 or early 2011 - CalGreen may be able to fill that purpose.)

**Implement Building Labeling**

In 2010, AB1103 will require an owner or operator of a nonresidential building to disclose a building’s ENERGY STAR® performance rating for the most recent 12 months to “a prospective buyer, lessee of the entire building, or a lender that would finance the entire building.”55 To support this requirement, AB1103 instructs California’s energy utilities to first obtain written authorization from nonresidential building owners or operators, and then to upload energy consumption data for these buildings to ENERGY STAR®’s Portfolio Manager.

52 In August 2001, the California Department of Housing and Community Development (HCD) published its report, “Pay to Play: Residential Development Fees in California Cities and Counties, 1999.” HCD’s survey of 89 cities and counties found significant variations of types and amounts of fees, often for jurisdictions that were adjacent to each other. See the California Department of Housing and Community Development’s website: [http://www.hcd.ca.gov/hpd/pay2play/pay_to_play.html](http://www.hcd.ca.gov/hpd/pay2play/pay_to_play.html).

53 See Appendix D, “Green Building Ordinances in California”.


55 Assembly Bill 1103 [Saldana 2007], p.2.
AB1103 is an important first step to disclosing information about building performance. It is time for California to take the next step: mandatory labeling of all public and commercial buildings. Tenants are entitled to the same disclosures that building purchasers receive under AB1103.

**Recommendations**

1. **Transition AB1103 to full building labeling.** The requirement for utilities to upload energy information directly to ENERGY STAR®’s Portfolio Manager helps to assure consistent reporting and reduces opportunities for gaming. Several additional elements will be needed to implement statewide building labeling:
   - **Make a finding that building labeling is in the public interest.** The state should adopt a policy that the needs of the public to know about the energy and environmental performance of buildings that they purchase, lease or occupy outweigh any need for confidentiality of energy data by building owners. With this finding, the hurdle of needing to locate and secure permission from building owners to upload building energy data to Portfolio Manager would be avoided.
   - **Implement labeling statewide.** Publicly owned utilities should also be required to upload data about the energy performance of buildings in their service areas to the state’s ENERGY STAR® or other (e.g., California-specific) Portfolio Manager system.
   - **Expand AB1103 disclosures.** The provisions of AB1103 should be expanded to require disclosure of buildings’ energy performance to all existing and prospective tenants. In
addition, disclosures should include the building’s energy use, water use and carbon footprint.56

2. **Apply a consistent statewide methodology** for benchmarking a building’s resource and environmental performance.

There are several benchmarks from which to choose. In addition to ENERGY STAR® and LEED®, ASHRAE has announced that it is developing a commercial building energy labeling program that will (a) include both Asset (design) and Operational (measured) ratings, and (b) build on and complement the existing DOE/EPA ENERGY STAR® efforts while emphasizing the need to expand the applicability of ENERGY STAR® ratings to a wider range of building types.57

Presently, however, no single existing rating system exists that is optimal for California. The Alliance recommends a hybrid of LEED® and ENERGY STAR® until a California-specific methodology (possibly in conjunction with CalGreen) is developed.

The Alliance’s Sustainable Portfolios initiative targets commitments from real estate market leaders to: (1) seek space compliant with LEED® Silver or better and/or ENERGY STAR® 85 or better, and (2) require that their landlords (or tenants) implement all energy efficiency, water efficiency and waste reduction measures with a payback of 3 years or less (after utility and/or governmental incentives) for lease renewals and/or new leased space that cannot be cost-effectively upgraded to LEED Silver or ENERGY STAR® 85+.

**Leverage Market Power**

The overarching objective of the Alliance is to accelerate voluntary adoption of sustainability. The Alliance accomplishes this goal by encouraging key market participants and stakeholders, including policymakers, to collaboratively identify key barriers to sustainability adoption and then to collectively develop and implement strategies to overcome these barriers.

In the green buildings/leasing sector, the Alliance and its Advisors decided to focus their attention on: (1) helping large owners and tenants overcome split incentives to green leased buildings; and (2) developing mutual commitments between building owners and tenants to implement cost-effective measures that minimize the environmental footprint of the leased space. In addition, the Alliance is preparing to launch a statewide initiative that will target

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participation of the state’s largest owners and tenants in adopting and implementing common minimum green building policies, goals and criteria for their lease portfolios.

The senior real estate professionals participating on the Alliance’s Advisory Committee stated that the key to transformation of California’s leased office space market is to engage the assistance of the state’s largest owners and tenants that collectively have the ability to drive the market. The Alliance’s Advisors stated that if every large tenant sent a clear message to the real estate market that they would only lease space that met certain minimum green criteria, no buildings would be built that did not meet at least those minimum criteria. In addition, large owners would be motivated to green their portfolios to minimize the risks that their properties would be disadvantaged in competitive markets.

**Recommendations**

1. **Assist the state’s largest owners and tenants** in establishing and adopting a common set of minimum green criteria to send a clear message to the market that any new or retrofitted commercial office space in California must meet those criteria.

2. **Partner with energy and water utilities** on whole building and portfolio approaches that streamline the greening of entire inventories of buildings. Utility incentive payments should be structured in a manner that rewards incremental strategies but also provides strong economic incentives for completing the greening of the organization’s entire portfolio. (For example, utilities could pay standard incentives on a project-specific basis, with a bonus incentive earned upon completion of an owner or tenant’s entire lease portfolio.)

**Leverage Ancillary Markets**

As noted in Chapter 5, ancillary markets such as insurance, financing, architectural design, engineering, and other real estate services also have a significant role. As more green products and services enter the market, the green building value proposition becomes more visible, more compelling, and easier to access.

- Special green building risk management products such as those offered by Fireman’s Fund Insurance Company reinforce the value of higher performing (and therefore, lower risk) green buildings while also conveying direct economic benefits to owners and tenants of green buildings through lower insurance premiums.
- Green financing instruments increase the value of green buildings through preferential access to credit and reduced interest and transaction costs.
- Increased access to knowledgeable architects and engineers experienced in green design approaches and measures reduces both capital and operating risks and costs.

For our industry, the major focus is: How are we going to recycle existing buildings? Anything that helps ease the rehabilitation of existing buildings is very important.

*James A. Thomas, President and CEO, Thomas Properties Group*
• Increased access to real estate brokers and appraisers experienced in green buildings, leases, transactions and real estate markets will increase green leasing adoption.

• Utility programs that provide technical and financial assistance tailored to the needs of building owners and tenants under different types of lease structures can also significantly accelerate adoption of green leasing.

Many market participants are beginning to use “green” as a means to differentiate themselves in today’s highly stressed real estate market. This presents a significant opportunity to ramp up training in green building costs and benefits, design and operating characteristics, and insurance, financial and utilities’ programs and services.

Presently, the Alliance is partnering with real estate brokers and others to widely distribute its Green Leasing Toolkit and to conduct training through seminars and webinars. In 2008, the Alliance presented the Toolkit at various industry conferences including the U.S. Green Building Council’s GreenBuild 2008. Recently, the National Association of Realtors and the Institute of Real Estate Management requested permission to integrate portions of the Toolkit into their real estate curricula.

Recommendations

1. **Provide education and training** about green building characteristics, operations, costs and benefits, markets, green leasing tools and techniques, green portfolio strategies, etc. to utilities, insurance companies, lenders, architects, engineers, real estate brokers and sales persons, appraisers and other market participants.

2. **Leverage licenses and license renewals** to require training on the costs and benefits of green buildings and green real estate principles for all real estate brokers and salespersons, insurance brokers and agents, architects and engineers, and licensing for other real estate market participants and encourage them to help their clients get into green properties.

**Overcome Economic Barriers**

Whether a building is owned or leased, one of the major barriers to greening office space is economic. For new buildings, while studies have shown that the cost premium is declining significantly as “green” becomes the new standard, it is the incremental cost of integrating sustainable design principles and equipment vs. “traditional” design techniques. For leased space in existing buildings, it is a combination of first costs of retrofits and measures and split
incentives in the leasing transaction. The structure of utility and other programs can effectively address these types of barriers.

**Recommendations**

1. **Provide comprehensive utility services including financing.** Whether it is the owner/landlord or the tenant that is implementing a building retrofit or installing an efficiency measure, the initial costs of technical audits and assessments, engineering design, equipment purchases and installation require upfront cash. First costs have always been a barrier. In today’s highly stressed economic environment, it is more critical that this barrier be directly addressed.

The state of California is a case-in-point. Although the California Public Utilities Commission authorized $17 million in public goods charge funds towards energy efficiency retrofits for state facilities during 2006-200858, only a small portion of the funds could be accessed. According to Roy McBrayer, Deputy State Architect and Program Manager for the Governor’s Green Action Team, the primary barrier for the state has been first costs. Unable to fund the investment grade audits needed to identify cost-effective whole building retrofits, the state has been unable to access the incentives set aside by the utilities specifically to help upgrade state buildings.

Consequently, the state turned to Energy Service Companies (ESCOs) that fund the total cost of energy efficiency measures and charge the state fees that are structured to recover the ESCO’s investment plus profit over the term of the contract. Under this type of program, the state displaces a portion of its energy costs with ESCO payments. The objective is to achieve “revenue neutrality” over the contract period (i.e., the state seeks to pay no more in annual operating costs than it would if it had continued taking utility services without implementing any efficiency upgrades). In this manner, the state is able to avoid the first costs of efficiency measures. Under this approach, the state will have the benefit of the ESCO-installed efficiency

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measures for the entire life of the measures after the ESCO payments have concluded. In addition, the state will avoid operating risk since the ESCO assumes all performance risks for the installed measures.

From a cash perspective (i.e., without imputing a value for the equipment and performance risks assumed by the ESCO), the state’s costs for the installed measures are higher under an ESCO arrangement than they would have been if the state had purchased and installed these same measures itself. (As a for-profit entity, the ESCO has a higher cost of capital, its rates include a premium for equipment and performance risk, and the ESCO also earns a profit.) 59

Another option for overcoming the first cost barrier is for utilities to provide comprehensive services that include:

- Technical audits and assessments to identify, evaluate and prioritize cost-effective measures;
- Engineering design; equipment procurement, installation, and testing; building commissioning and retro-commissioning;
- Verification of measures and payment of incentives; and
- Financing of balance of plant.

California’s investor-owned utilities have proposed an on-bill financing (OBF) program for their 2009-2011 energy efficiency program cycle that could help address these issues. However, the 2009-2011 OBF programs are designed as pilots that use Public Goods Charge funds without leverage.60 Based on its discussions with multiple market participants, both public and private, the Alliance believes that comprehensive services that include both technical assistance and financing can avoid the need by utility customers to provide initial cash outlays, thereby overcoming the first cost barrier to clean energy investments. In combination with on-bill (or similar types of streamlined) financing mechanisms, these types of comprehensive services could significantly simplify core and shell retrofit decisions by building owners.

59 Like any taxable service provider, the price of ESCO services typically includes cost of capital at rates higher than tax-exempt entities; an allowance for bad debt and operations and other types of risks; and profit.
60 I.e., the OBF pilots provide zero or low-interest loans to qualified customers who opt to participate in the program. The principal for these loans is funded from ratepayer contributions to the Public Goods Charge and are not leveraged in any way. The consequence of this pilot structure is that OBF capacity is unlikely to meet any significant portion of customer demand for financing during the pilot period.
2. **Establish Separate Programs for Building Owners vs. Tenants.** From the perspective of green leasing, comprehensive services that are structured to address the split incentive challenges of leased properties can significantly accelerate green leasing. In particular, utility and other programs should be designed to allow either the building owner or the tenant to equally access utility incentive programs. In addition, programs should be tailored to maximize subscriptions by owners and tenants under different types of lease arrangements.

3. **Provide Enhanced Incentives for Whole Building and/or Whole Portfolio Retrofits.** The highest benefit measures are typically related to a building’s core and shell (i.e., central building HVAC, building envelope and other systems). As confirmed by Thomas Properties Group, under typical lease arrangements, building owners are not economically motivated to invest in core and shell retrofits because tenants would receive the benefits of lower energy costs. Market leaders like Thomas Properties made a conscious decision to invest in whole building retrofits to create green portfolios as a market differentiator.

   Recognizing the huge unrealized potential in California’s leased commercial office space, utility programs should be reconfigured to encourage building owners to invest in fully integrated whole-building upgrades that include energy efficiency, demand response, renewable energy and water efficiency. Enhanced incentives for whole building and/or portfolio approaches in combination with on-bill financing and green leasing techniques could help overcome these significant barriers for at least those owners that can understand and appreciate the enhanced asset value of a higher performing property.

4. **Leverage AB1103 to Encourage Owners to Maximize their ENERGY STAR® Rating.** Members of the Alliance’s technical team have reported that large portfolio owners are conducting assessments of their current properties and proceeding with securing ENERGY STAR® ratings for buildings that meet the minimum score of 75. However, these owners have not yet commenced upgrading buildings that do not qualify for ENERGY STAR® rating. Utility programs should leverage the momentum created by AB1103. For example, utility programs could reimburse building owners that agree to achieve ENERGY STAR® rating for the cost of the rating. This is a fairly modest cost – about $1,500 to $2,500 or more, depending on the size and complexity of the building. Additional incentives could be offered to owners that agree to achieve an ENERGY STAR® rating of 85 or more for any particular building and/or for all buildings in their portfolio.61

**Overcome Barriers to Green Leasing**

As in any emerging market, where there are no prescribed standards, rules or protocols and “best practices” are being developed by multiple market participants real-time, there is a need

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61 Note that ENERGY STAR® has some limitations in that not all types of buildings can be rated using Portfolio Manager. For such buildings, alternative methods are needed.
to establish open communications, guidelines and systems for overcoming barriers to green leasing.

- Building owners and tenants should have open dialogues about the costs and benefits of potential green building retrofits, both core-and-shell and tenant improvements, to identify cost-effective opportunities and discuss what transactions or accommodations may be needed to implement these for the benefit of both parties.

- Building owners, tenants and their utility service providers should communicate openly about how utility programs can help overcome the economic barriers of first costs and split incentives in California’s leased office space.

- Real estate brokers and salespersons, insurance brokers and agents, lenders, architects and engineers, utilities and energy services providers all have a role in promulgating messages about green building costs and benefits, and adapting their products and services to better meet the needs of green lease arrangements.

Although it is not easy, it is possible. Two excellent examples of green leasing involve state tenants:

- The California Environmental Protection Agency (Cal/EPA) is the sole tenant in a building owned by the City of Sacramento and managed by Thomas Properties Group. From the outset, these three parties partnered with the Sacramento Municipal Utility District (SMUD) and other key stakeholders to bring the very best in green building design, operations and technologies to the Cal/EPA’s Headquarters in Sacramento, making it one of the highest performing buildings in the U.S. Although the building was built to high current standards when it was placed in-service in 2000, additional measures were identified and implemented by the partners that reduce the state’s annual operating costs by $1.4 million. Today the partnership has expanded to include utilities, technology developers, equipment manufacturers and suppliers of innovative recycled materials. In addition, SMUD donated solar panels that help to meet a portion of the building’s electricity use. Presently, Thomas Properties Group is working with equipment suppliers to test LED lighting applications and small wind turbines. The Cal/EPA Headquarters has become a living laboratory and showcase for the best in green building design, operations and new efficient technologies.
A partnership among a building owner in Fresno, the California Department of General Services, Pacific Gas and Electric Co. (PG&E) and Enovity, Inc., a technical service provider headquartered in San Francisco that specializes in building commissioning and retro-commissioning, resulted in a green lease. This building occupied by a state agency for ten years was in serious need of energy upgrades, such that work productivity and health was at risk during summer months. In fact, at some times, the heat reportedly was unbearable and forced the office to shut down and send employees home. Energy bills were costing taxpayers about 23% more than comparable buildings. Lighting, HVAC and shell (window) retrofits were identified and evaluated by Enovity in 2008 under the Innovative Energy Efficiency Partnership Program for DGS State-Leased Facilities that is funded by PG&E ratepayers under the auspices of the California Public Utilities Commission. PG&E paid incentives for these retrofits and the building owner agreed to fund the balance of the energy improvement costs in return for the state’s renewal of this lease for another 10 years. The state paid 6 cents/square foot more in rent for 4 years, but realized substantial benefits through a combination of energy cost savings of 8 cents per square foot and substantially reduced risks to employee health and productivity. The State will continue to realize net energy savings of 8 cents per square foot if it chooses to remain in this location beyond the 4 year lease renewal firm term. Without the utility enhanced lease, the alternative may have
been to relocate the 60,000 ft² office at an estimated cost of $1 million to California taxpayers.⁶²

These inspirational examples from the state of California illustrate the compelling benefits that are achievable through green leasing. Importantly, they demonstrate that while green leasing may not be “simple”, it is achievable where willing owners, tenants, utilities and other key stakeholders are motivated to make it work.

An excellent example of green initiatives by an owner is Thomas Properties Group’s major rehabilitation of City National Plaza in Los Angeles. Since the facility was acquired in 2003, Thomas Properties has made significant investments in core and shell retrofits to the 2.5 million ft² complex, earning an ENERGY STAR® rating of 90. In making the commitment to “go green”, Thomas Properties Group has also established high performance criteria for Tenant Improvements and is working closely with both its existing and prospective tenants to assure that the complex maintains a very high performance rating.

Thomas Properties Group is currently working towards obtaining LEED® O&M certification for City National Plaza.

The Alliance’s Green Leasing Toolkit provides sample policies, goals, checklists, tools and techniques to help owners and tenants establish a strong dialogue and commence the path of green leasing. Portfolio management tools help holders of large lease portfolios, both owners and tenants, create transparency and accountability while identifying green leasing opportunities and tracking progress towards their green portfolio goals.

Existing commercial office buildings represent a huge untapped opportunity for energy savings. Green leasing is not simple – it takes planning and analysis to identify cost-effective opportunities, and it takes a willing owner and tenant committed to finding mutual benefits.

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⁶² Source: Interview with Roy McBrayer, Deputy State Architect and Program Manager - Green Action Team, California Department of General Services.
APPENDIX A

Green Leasing Toolkit, version 2.0
APPENDIX A
Green Leasing Toolkit, version 2.0

In fall 2007, the California Sustainability Alliance (Alliance) assembled a group of seasoned professionals with substantial experience in commercial real estate to develop and test strategies to overcome the significant barriers to greening the 90% of California’s commercial office space that is leased. This effort focused on “green leasing”, i.e., integrating sustainability practices into the entire commercial leasing process. This includes service provider selection; marketing of buildings, development of green specifications; request for proposal (RFP) and letter of intent (LOI) drafting; site selection and due diligence; and the negotiation and drafting of realistic and enforceable lease language.

The templates offered in the Green Leasing Toolkit are established processes within the leasing industry, hence most of these tools should be relatively easy to implement. These tools can be used by both landlords and tenants who manage or occupy large portfolios of facilities as well as small business owners and landlords who hope to green an individual building.

The Toolkit supports tenants and landlords in the following ways:

- Educating their organizations
- Developing their own green leasing policies and requirements
- Communicating policies and requirements to the market
- Measuring and comparing the green attributes of different buildings
- Developing specific lease language
WHAT IS GREEN LEASING?

We define green leasing as the integration of energy and water efficiency, emissions reduction, waste minimization and other sustainability objectives throughout the entire commercial leasing process. Green leasing dictates that building performance become transparent to all parties involved in the lease transaction. This performance includes the efficiency in which the main engineering plant operates (HVAC, plumbing, lighting, etc.), the environmental standards of building materials, as well as the effectiveness of the building operations and management programs.

Green leasing has also altered the traditional relationship between the landlord and tenant. Tenants are demanding alterations in core and shell improvements as well as demanding that landlords perform their operations and maintenance duties in specific ways. Landlords are dictating the type of materials and equipment a tenant can use in its office space as well as demanding compliance around programs such as recycling and conservation. These are rather new circumstances and ultimately a new set of processes and negotiation points are developing within commercial leasing – green leasing.

We believe that the majority of green leasing work occurs months before the tenant has selected a suitable space. In other words, green leasing is much more than the negotiation and drafting of lease language.

THE MARKET

The market for green commercial office space in California is characterized by low but increasing availability and rising demand. Principal market drivers include significant increases in federal, state and local green building policies, goals and mandates; increased attention and awareness by corporate leaders; reduced costs of green technologies and measures; growing expertise within the construction and architectural design industries; improved knowledge and value of certification standards; and reduced operating costs. However, of the 1.3 billion square feet of California commercial office space, today only 10% is presently ENERGY STAR® rated, and less than 1% is LEED® certified.
Green Office Buildings in California

<table>
<thead>
<tr>
<th>Market</th>
<th>Square Feet (Million)</th>
<th>% Green (Square Feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Los Angeles</td>
<td>419.1</td>
<td>15.2%</td>
</tr>
<tr>
<td>San Francisco</td>
<td>158.2</td>
<td>27.2%</td>
</tr>
<tr>
<td>Orange</td>
<td>143.4</td>
<td>15.2%</td>
</tr>
<tr>
<td>East Bay / Oakland</td>
<td>101.1</td>
<td>10.0%</td>
</tr>
<tr>
<td>San Diego</td>
<td>113.7</td>
<td>11.1%</td>
</tr>
<tr>
<td>South Bay / San Jose</td>
<td>108.7</td>
<td>10.2%</td>
</tr>
<tr>
<td>Sacramento</td>
<td>105.6</td>
<td>5.9%</td>
</tr>
<tr>
<td>Inland Empire</td>
<td>63.9</td>
<td>3.4%</td>
</tr>
<tr>
<td>Fresno</td>
<td>28.9</td>
<td>3.8%</td>
</tr>
<tr>
<td>Marin / Sonoma</td>
<td>6.5</td>
<td>4.6%</td>
</tr>
<tr>
<td>Stockton / Modesto</td>
<td>10.7</td>
<td>0.9%</td>
</tr>
<tr>
<td>Santa Barbara / Santa Maria /</td>
<td>5.4</td>
<td>1.9%</td>
</tr>
<tr>
<td>Goleta</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bakersfield</td>
<td>11.9</td>
<td>2.5%</td>
</tr>
<tr>
<td>Santa Cruz / Watsonville</td>
<td>11.4</td>
<td>0.0%</td>
</tr>
<tr>
<td>Salinas</td>
<td>30.7</td>
<td>0.0%</td>
</tr>
<tr>
<td>San Luis Obispo / Paso Robles</td>
<td>6.9</td>
<td>0.0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1326.1</strong></td>
<td><strong>13.1%</strong></td>
</tr>
</tbody>
</table>

Source: CoStar Market Data, April 2009

This is changing. The rate of construction of green buildings within the commercial sector has accelerated. According to global real estate investment company RREEF, the number of LEED® projects has been growing over the past 3 years at a compound annual growth rate of 50-100%. In the period 2006-2007, the multi-tenant commercial sector has grown to represent 13.8% of LEED® buildings, up from just 1% of all LEED® buildings during the years 2000-2003.

THE TOOLS

The Green Leases Toolkit is designed to assist tenants and landlords with the greening of leasehold sites by incorporating specific tools and work flow into the leasing process.

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TENANTS TOOLS

Portfolio Characterization: Analyzing the Opportunity

“Portfolio characterization” simply means grouping properties or leases within the portfolio by common characteristics so standardized strategies can be developed for certain types of leases. These strategies are aligned with the likelihood of a successful negotiation and thus are realistic and achievable. Portfolio characteristics that can be used to identify specific green leasing strategies are as follows:

- **Size of Leases as percent of Total Rentable Space in Building** – The size of the lease in relation to the total building size is indicative of the amount of influence a single tenant is likely to have in decisions about building retrofits and operation and maintenance issues. In these instances – where the tenant is the majority tenant of the building - the greening opportunity is greatest and the most stringent criteria should be used in establishing green objectives.

- **Lease Term** – The longer the lease term the more feasible investments in building upgrades become due to the ability for the investor to recoup their initial capital costs. Many green building upgrades related to core and shell improvements have higher payback periods than interior upgrades (lights and controls), and thus are typically only attractive to tenants and landlords who take more of a life cycle cost approach. Instances where leases have terms longer than 10 years are potential candidates for more comprehensive sustainability options.

- **Year Building was Placed In-Service** – The vintage of a building is a general indicator of energy and water efficiency. Depending on the landlord’s maintenance practices, older buildings would likely have more greening opportunities and thus should have specific criteria related to commissioning and technology upgrades when developing specific goals and objectives for these sites.

- **Lease Structure** – Lease structure, or the type of operating expense clause, is an important indicator of the type of green leasing strategy that should be undertaken. As discussed earlier in this paper, the lease’s structure defines the responsibilities for paying the operating expenses, including utilities.

- A gross lease is one in which the landlord is responsible for providing and paying for all the operating expenses including the utilities. The utility costs are part of the lease payment. The relevance of this type of lease for green leasing is that energy-savings (i.e. lower utility bills) that may result from efficiency upgrades will benefit the landlord directly, and will only benefit the tenant if the gross rent is reduced. Gross or full service leases also do not provide incentive for tenants to invest in efficiency measures within their own interior space due to the fact that other tenants...
in the building will benefit from the decreased operating expenses. The landlord should be extremely motivated to reduce operating costs in these types of leases.

- A net lease, is a lease in which the tenant is responsible for paying the utilities. Net leases present a major split-incentive problem for landlords because although the landlord may wish to upgrade building systems, the tenant would benefit from any subsequent lower utility bills. It should also be noted that net leases do not present issues of split incentives if the tenant pays for the costs of the efficiency upgrades, and although it is unlikely that this would occur for major building systems (HVAC and plumbing systems) smaller investments within the tenant’s build out, such as lighting fixtures and sensors, should be reviewed by the tenant in net lease. It should also be noted that most leases allow landlords to amortize the capital costs of energy efficiency equipment if the upgrade results in lowered total operating costs. Green minded tenants who are in net leases should develop aggressive goals regarding energy efficiency.

- **Single-Tenant vs. Multi-Tenant** - From both the tenant and landlord viewpoint, there is greater flexibility to implement green programs when there is a single building occupant.

**Green Criteria: Establishing realistic and achievable goals**

Once green leasing potential is analyzed over the various lease types, specific green criteria are established for various segments of the portfolio. Green leasing criteria can specify a green lease certification (such as LEED® or ENERGY STAR®) or building programs and technologies around energy, water, recycling, building monitoring, and alternative transportation. The green leasing criteria is a function of the organizations overall sustainability goals and targets. For example if an organization had a company wide goal to reduce their energy and water use by 15%, the green leasing criteria around energy and water efficiency should established so those goals can be met.

When distinct criteria have been established, real estate managers and service providers have clear objectives in regards to new, renewing and existing leases and a one size fits all standard is avoided. Ultimately incremental progress can be made across the portfolio. Green criteria typically are expressed in specification sheets or “check lists”.

To download examples of specific green lease criteria that organizations have established, visit [http://sustainca.org/green_leases_toolkit/tenant_tools_green_criteria](http://sustainca.org/green_leases_toolkit/tenant_tools_green_criteria).
Green Policy Statement: Linking Sustainability Goals to Leasing

This document is a high level policy statement in which an organization defines its intended sustainability goals as they relate to leased facilities. Key focus areas are energy and water use, waste recycling, and alternative transportation. The green policy statement should be introduced to the various parties engaged in the leasing process, such as brokers, architects, landlords, etc. The statement communicates to both employees and outside vendors the sustainability practices the company expects in its office environment. The Green Policy Statement can also include the tenants green criteria that were established in the Portfolio Characterization process.

The Green Policy Statement provides model language for tenant sustainability policy.

To download the sample policy statement, visit http://sustainca.org/green_leases_toolkit/tenant_tools_green_policy_statement.

Green Request for Proposal (“RFP”): Request for Proposal: Establishing Green Initiatives Early

Once a short list of sites has been established, it is customary for a tenant to issue a Request for Proposal (RFP) through its broker representative. The RFP is used for soliciting, evaluating, and selecting proposals from landlords, and defines the tenant’s basic requirements such as the definition of the premises, lease term, expansion and renewal options, rental rate, and tenant improvements. The Green RFP includes a tenant’s requirements relating to its green practices and how these will be structured into the lease document. The green RFP can also be used by tenants wish to address landlords during their lease term. A RFP can be a good discussion starter in regards to communicating to the landlord in regards to what the tenant’s specific criteria will be for the space.

To download an example of a Green RFP, visit http://sustainca.org/green_leases_toolkit/tenant_tools_green_request_proposal_rfp/

Lease Provision Database: Integrating Your Green Initiatives into the Lease

Just as is the case with other financial, legal or operational agreements between the landlord and tenant, it is important that green initiatives are properly structured within the lease. The Green Lease Provision Database is meant to provide the user with examples of lease language and concepts (sample provisions relating to building certification, transportation, water use, energy use, maintenance, and recycling are provided) as they pertain to a user’s particular occupancy situation (single tenant vs. multi tenant) or specific objectives (energy utilization, recycling, etc). These lease provisions are not intended to be used without the input of a qualified attorney who is experienced in commercial leasing matters.
To download the database, visit http://sustainca.org/green_leases_toolkit/tenant_tools_lease_provision_database.

**Due Diligence Scorecard: Comparing the Options and Making an Informed Decision**

After the tenant has received responses back from the short listed landlords – usually in the form of a Letter of Intent (LOI) – the tenant will need to analyze the proposals against one another. This comparative analysis evaluates the financial (rent, expenses, TI allowances), the legal (term, options, use) and the operational terms of a specific deal it is preferable that a tenant be able to compare the green characteristics of the particular deals as well. A scorecard that includes each building’s green attributes will allow for more informed decisions around a company’s green leasing decisions.

To download an example of a Due Diligence Scorecard, visit http://sustainca.org/green_leases_toolkit/tenant_tools_due_diligence_scorecard.

**Options Matrix: Establishing Realistic and Achievable Greening Options**

Realistic and achievable greening options should be established over the entire leased portfolio. This means that different options will need to be examined for different lease types (HQ vs. sales offices, midterm vs. new leases, Triple Net vs. Gross, etc.).

The Options Matrix assists the tenant in identifying baseline green objectives to pursue through the leasing process. These tools are meant to provide tenants with an understanding of baseline green objectives that constitute achievable lease-based goals, based on generalized elements of their lease profiles.

It’s important to note, that each lease negotiation will be unique. This tool should not discourage a tenant from pursuing a green option that it feels is attainable or important.

To download the Options Matrix, visit http://sustainca.org/green_leases_toolkit/tenant_tools_options_matrix.
LANDLORD TOOLS

Green Work Letter

Landlords who are striving to create high performing interior environments as well as core and shell systems will need to standardize the work letter which specifies the design and construction of tenant’s office space. A green work letter should specify the building materials and systems that should be used, demolition and construction recycling practices as well as the type of lighting and plumbing fixtures to be installed.

For examples of specifications to be included when developing a letter, visit http://sustainca.org/green_leases_toolkit/landlord_tools_green_work_letter.

Green Marketing Material: Creating Transparency

As green leasing requirements from tenants become more common, landlords are becoming increasingly more transparent in regards to promoting their buildings environmental attributes. Key performance data such as energy, water and carbon use and intensity, recycling operations, as well as key green building programs are being made readily available to tenants and their architects and brokers.

To download an example, please visit http://sustainca.org/green_leases_toolkit/landlord_tools_green_marketing_materials.

ENERGY STAR® Portfolio Manager: Measuring and Monitoring the Initiative

ENERGY STAR® is a joint program of the U.S. Environmental Protection Agency (USEPA) and the U.S. Department of Energy (USDOE). ENERGY STAR® applies a national energy performance rating, or benchmark on a scale of 1-100, to help energy managers assess how efficiently their buildings use energy, relative to similar buildings nationwide. A rating of 50 indicates average energy performance, while a rating of 75 or better indicates top performance. ENERGY STAR® includes consideration of both energy and water in its rating.

Portfolio Manager is an interactive energy management tool that allows you to track and assess energy and water consumption across your entire portfolio of buildings in a secure online environment. Whether you own, manage, or hold properties for investment, Portfolio Manager can help you set investment priorities, identify under-performing buildings, verify efficiency improvements, and receive EPA recognition for superior energy performance.

Owners should utilize the ENERGY STAR® Portfolio manager to track and monitor the efficiency of their building.
APPENDIX B

California Department of General Services

Standard Lease Form and Exhibits
STATE OF CALIFORNIA  

DEPARTMENT OF GENERAL SERVICES  
REAL ESTATE SERVICES DIVISION

STANDARD LEASE FORM

LEASE COVERING PREMISES LOCATED AT

LENSOR'S FED. TAX. I.D., NO. OR SOCIAL SECURITY NO.

TEENANT AGENCY

File No.:  
Project No.:  

Preamble

THIS LEASE, made and entered into this day of by and between

hereinafter called the Lessor, without distinction as to number or gender, and the State of California, acting by and through the Director of the Department of General Services, hereinafter called the State;

WITNESSETH

Description

1. The Lessor hereby leases unto the State and the State hereby hires from the Lessor those certain premises with appurtenances situated in the City of , County of , State of California, and more particularly described as follows:

Approximately net usable square feet of office space on the floor of the building located at as outlined in red on the attached Exhibit "A" plan, together with specifications marked Exhibit "B" and lessor compliance procedures marked Exhibit "C", said Exhibits "A" and "B" and "C", Project No. dated , hereby being incorporated into this lease, and including nonexclusive unobstructed parking spaces contiguous to the subject building, and unlimited use of the building's common facilities. State shall have access to and use of the leased premises 24 hours per day, seven (7) days per week with no exceptions.

Term

2. The term of this lease shall commence on , and shall end on , with such rights of termination as may be hereinafter expressly set forth.

Early Termination

3. The State may terminate this lease at any time effective on or after , by giving written notice to the Lessor at least days prior to the date when such termination shall become effective. If the State fails to complete its move out within the notice period and remains in the premises, additional rent shall be paid and prorated on a thirty (30) day month, based on the actual number of days the State occupies the premises following the effective date of termination.

Rent

4. Rental shall be paid by the State in arrears on the last day of each month during said term as follows:
Rental payable hereunder for any period of time less than one month shall be determined by prorating the monthly rental herein specified based on the actual number of days in the month. Rental shall be paid to Lessor at the address specified in Paragraph 5 or to such other address as the Lessor may designate by a notice in writing. If the premises are not complete pursuant to Paragraph 6 by the date shown in Paragraph 2, it is understood and agreed by and between the parties that, at the State's sole option, the dates shown in Paragraphs 2 and 3 and the dates and dollar amounts shown in Paragraph 4 may be adjusted to the first of the month following the State's acceptance of the completed premises, such acceptance shall not unreasonably be withheld. If the State exercises this option, it is agreed the State will complete unilaterally an amendment to the lease to revise the herein above stated dates. Any accrued rents for the period of time prior to the unilaterally adjusted commencement date will be paid in accordance with Paragraph 8. Additionally, it is understood and agreed between the parties that, at the State's option, the dates shown in the "CPI Escalator Operating Expenses" paragraph, if incorporated herein, shall be adjusted to reflect the time delay between lease commencement and the first of the month following the actual acceptance date. In the event this lease agreement contains a provision granting the State an Option to Purchase the premises, it is further agreed herein by the parties that, notwithstanding the provision of the Option to Purchase paragraph herein, the effective dates and corresponding purchase option prices of said Option to Purchase shall be adjusted consistent with any adjustment to the lease commencement date, as stated above, which initial purchase option date shall in no event be less than twenty-four (24) months nor more than thirty-six (36) months from the "adjusted" commencement date. Said "adjusted" purchase option dates shall be established consistent herewith and incorporated into said lease with a unilateral amendment by the State.

Notifications

5. All notices and correspondence herein provided to be given, or which may be given by either party to the other, shall be deemed to have been fully given when made in writing and deposited in the United States Mail, certified and postage prepaid and addressed as follows:

To the Lessor

Phone No. ()
FAX No. ()

and to the State:

DEPARTMENT OF GENERAL SERVICES,
REAL ESTATE SERVICES DIVISION
LEASE MANAGEMENT
707 THIRD STREET, SUITE 5-305
WEST SACRAMENTO, CA 95605

PHONE NO. (916) 375-4172
FAX NO. (916) 375-4173

ALL NOTICES AND CORRESPONDENCE MUST REFERENCE TENANT AGENCY AND PREMISES ADDRESS

Rental warrants shall be made payable to: __________

and mailed to: __________________________

______________________________

Nothing herein contained shall preclude the giving of any such written notice by personal service. The address to which notices and correspondence shall be mailed to either party may be changed by giving written notice to the other party.
6. Lessor agrees that, prior to , and at Lessor's sole cost and expense, all required construction, improvements and/or alterations, if any, shall be completed and the leased premises made ready for State's occupancy in full compliance with Exhibit "A", consisting of sheets titled, "Office Quarters, Project No. " dated , and in accordance with Exhibit "B", consisting of pages, titled, "Outline Specifications, Project No. " dated , and Exhibit "C" consisting of pages titled, "State Fire Marshal, Cal-ADA Access Compliance & Sustainable Measure Procedures Project No. " dated which Exhibits "A" and "B" and "C" are by this reference incorporated herein.

7. Lessor shall notify the State in writing by certified mail of the date the leased premises will be completed and ready for occupancy at least thirty (30) days prior thereto. Such notice shall be a condition precedent to the accrual of rental hereunder, except however, that if the State occupies the premises prior to the receipt of such notice or prior to the expiration of the notice period of such notice, rental shall commence to accrue as of the date of occupancy.

Following execution of this lease, and not more than sixty days (60) prior to completion of construction and occupancy under this lease, State or its contractors or other representatives shall have the right to enter the premises for the purpose of installing certain equipment such as, but not limited to, modular system furniture, and electrical and telecommunications cabling and equipment.

State agrees to indemnify and hold Lessor harmless from and against any claims, damages, or other injury suffered by Lessor as a result of the work to be performed pursuant to this right to enter the premises prior to State's acceptance and occupancy of the premises. Lessor agrees to indemnify and hold State and its agents, contractors or other representatives harmless from and against any claims, damages, injury or other harm suffered by reason of the negligence or other wrongful act of Lessor or any of Lessor’s agents, contractors, or other representatives.

In no event shall the exercise of this right of entry be construed so as to cause an acceleration of the occupancy date of this lease or the obligation of the State to pay rent.

Lessor and State shall each make all reasonable efforts to ensure that the respective construction and installation work is scheduled in such a manner so as to not interfere with or delay the other.

In the event that one or the other party causes a delay in the other party’s work, such injured party shall be compensated in the following manner:

**Delays caused by the Lessor:**
Credit the State a compensating day of delay in the occupancy date and corresponding day of delay in payment of rent.

**Delays caused by the State:**
Credit the Lessor a compensating day of payment of rent from the actual date of occupancy.

Compensation will be in one day increments.

The parties agree that this shall be the sole remedy for delay, in that the calculation of damages in any other manner is too uncertain and not susceptible of accurate determination.

8. Lessor agrees that if the leased premises are ready for occupancy prior to the completion date specified above in Paragraph 6, State may elect to occupy the premises on the earliest date practical after its receipt of the herein required completion notice. The rent payable for any such early occupancy by the State shall be at the rate of $ per month, and shall be prorated on a daily basis for any partial month.
9. No rental shall accrue under this lease, nor shall the State have any obligation to perform the covenants or observe the conditions herein contained until the leased premises have been made ready for occupancy in accordance with the provisions hereof. It is specifically agreed that in the event the leased premises are not completed and ready for occupancy by the State on or before , then and in that event the State may, at its option and in addition to any other remedies it may have, terminate this lease and be relieved of any further obligations hereunder, providing that a fair and reasonable allowance for the following delays shall be added to said time for completion:

A. Acts of the State, its agents or employees, or those claiming under agreement with or grant from the State; or by
B. The acts of God which Lessor could not reasonably have foreseen or guarded against; or by
C. Any strikes, boycotts or like obstructive actions by employees or labor organizations and which are beyond control of Lessor, and which cannot be reasonably overcome; or by
D. Restrictive regulations by the Federal Government which are enforced in connection with a National Emergency.

In the event that the State elects to occupy premises before the work on the premises specified in Exhibit A and B is fully completed, the State will provide the Lessor with a punch list of work remaining to be completed (referred as the State’s “Punch List”). Lessor agrees that Lessor shall complete the remaining work no later than 14 calendar days from the date of receipt of said Punch List. If said Punch List is not completed within the specified 14-day period, Lessor agrees that, beginning on the first day after said 14-day period following occupancy of premises by the State, rent may at the State’s sole option be reduced to $ which is seventy percent (70%) of the base rent specified in paragraph 4 herein (excluding any amortization payments) until such time that the Punch List work is completed in full and that such completion of work is inspected and accepted by the State. The portion of the rent specified for amortization of tenant improvements, if any shall continue to be paid in full without interruption.

It is understood and agreed that the rent reduction specified above does not relieve Lessor of its obligation to complete said work and the State shall maintain all other remedies specified in the Lease.

It is understood by all parties hereto that it shall be the Lessor’s responsibility to remove any prior tenant.

10. Occupancy of the leased premises by the State shall not relieve Lessor in any respect from full compliance at all times with aforesaid Exhibits "A" and "B" and "C". It is further understood and agreed that any installation not in conformity with said Exhibits "A" and "B" and "C" shall be immediately corrected by the Lessor at Lessor's sole cost and expense. In the event Lessor shall, after notice in writing from the State requiring the Lessor to comply with the requirements of this paragraph in regard to a specified condition, fail, refuse or neglect to remedy such condition, State may terminate this lease without further obligation, or as to such specified condition, at its option and in addition to any other remedy the State may have, withhold rent due and bring the leased premises into conformity with said Exhibits at its own cost including State's Administrative costs, if any, and deduct the amount thereof from the rent that may then be or thereafter become due hereunder.

11. Lessor hereby warrants and guarantees that the space leased to the State will be operated and maintained free of hazard from Asbestos Containing Materials (ACM) and agrees to the conditions for survey, testing, and abatement of ACM described in Exhibit "B" as applicable. Lessor specifically agrees that, in the event the State elects to exercise its rights under the provisions of Paragraph 16 of this lease, any costs related to abatement or hazard from asbestos shall be the Lessor's responsibility as described in the aforementioned Exhibit "B."

12. Lessor, at Lessor's sole cost and expense, shall clearly mark the parking spaces described hereinabove as assigned to the State of California. Said parking spaces will be arranged and maintained so as to provide unobstructed access to each parking space at any time. In addition to any assigned parking spaces, State and its invitees shall have equal access to common spaces provided to all tenants on a first-come, first-served basis.

13. Lessor, at Lessor's sole cost and expense, during the term of this lease shall furnish the following services, utilities, and supplies to the area leased by the State, and also to the "common" building areas (if any) such as lobbies, elevators, stairways, corridors, etc., which State shares with other tenants, if any:
A. Sewer, trash disposal, and water service, including both hot and cold water to the lavatories except lavatories in Employment Development Department public toilet rooms in lobby areas which need only cold water.
B. Elevator (if any) service.
C. Electricity and/or gas as necessary to provide power for heating, ventilating, and air conditioning, and electrical or gas service as needed for State's operations.
D. Janitorial services sufficient to maintain the interior in a clean well-maintained condition; that is, to eliminate all visible dust, dirt, litter, grime, stains, smears, finger marks, etc., to the greatest practical degree possible, by performing at least the following:

**Daily:**

(1) Empty and clean all trash containers, and dispose of all trash and rubbish.
(2) Clean and maintain in a sanitary and odor-free condition all floors, wash mirrors, basins, toilet bowls, and urinals.
(3) Furnish and replenish all toilet room supplies (including soap, towels, seat covers, toilet tissue, and sanitary napkins). Furnish and replenish paper towel supply in all areas of the leased space.
(4) Sweep or dust mop all hard surface floors, and carpet sweep all carpeted areas, including stairways and halls. Offices with hard surface floors in the public lobby area shall be damp-mopped daily.
(5) Remove finger marks and smudges from all glass entrance doors.
(6) Specifically check, and if action is needed, then:
   a. Dust the tops of all furniture, counters, cabinets, and window sills, (which are free of interfering objects).
   b. Remove spots and/or spills from the carpets, floors, and stairways.

As needed, but not less frequently than:

**Twice Weekly:** Vacuum all carpets.

**Weekly:**

(1) Damp mop all hard surface floors.
(2) Dust all window blinds.
(3) Treat stainless steel fountains and sinks to eliminate stains and mineral deposits.
(4) Spot clean the walls.

**Quarterly:**

(1) Strip all hard surface floors and apply a new coat of floor finish; buff as necessary to produce a uniformly shining appearance.
(2) Treat carpets for static electricity control (if not integrated in the fabric).

**Semi-annually:** Wash all windows, window blinds, light fixtures, walls, and painted surfaces.

**Annually:**

(1) Steam clean carpets to remove all stains and spots.
(2) Clean drapes.

In the event of failure by the Lessor to furnish any of the above services or supplies in a satisfactory manner, the State may furnish the same at its own cost; and, in addition to any other remedy the State may have, may deduct the amount thereof, including State's administrative costs, from the rent that may then be, or thereafter become due hereunder.
14. A. During the lease term, the Lessor shall maintain the leased premises in good repair and tenantable condition, so as to minimize breakdowns and loss of the State's use of the premises caused by deferred or inadequate maintenance, including, but not limited to:

(1) Generally maintaining the leased premises in good, vermin-free, operating condition and appearance.
(2) Furnishing prompt, good quality repair of the building, equipment, and appurtenances.
(3) Furnishing preventative maintenance, including, but not limited to, manufacturer’s recommended servicing of equipment such as elevator (if any), heating, ventilating and air conditioning equipment, and fixtures.
(4) Furnishing ongoing maintenance and prompt repair of any and all special equipment and systems referenced in Exhibits A and B including but not limited to, security and access control systems, fire suppression systems, special HVAC systems for computer rooms, and UPS systems.
(5) Furnishing and promptly replacing any inoperative light bulbs, fluorescent tubes, ballast, starters, and filters for the heating, ventilating and air conditioning equipment as required.
(6) Furnishing remedial painting as necessary to maintain the premises in a neat, clean and orderly condition.
(7) Annual testing and maintenance of all fire extinguishers in or adjacent to the leased premises.
(8) Repairing and replacing as necessary intrabuilding network cable and inside wire cable used for voice and data transmission.
(9) Repairing and replacing parking lot bumpers and paving as necessary. Repaint directional arrows, striping, etc., as necessary.
(10) On a weekly basis, sweeping parking areas and sidewalks, maintaining landscaped areas, including sprinklers, drainage, etc., in a growing, litter-free, weedfree, and neatly mowed and/or trimmed condition.
(11) Repairing and replacing floor covering as necessary. Lessor, at Lessor's sole cost, shall arrange for moving of furniture and equipment prior and subsequent to the repairing or replacement of floor covering.
(12) Keeping all walkways, parking lots, entrances, and auxiliary areas free of snow, water, oil spills, debris, or other materials which may be hazardous to users of the building.

B. Lessor shall provide prompt repair or correction for any damage except damage arising from a willful or negligent act of the State's agents, employees or invitees.

C. Except in emergency situations, the Lessor shall give not less than 48 hour prior notice to State tenants, when any pest control, remodeling, renovation, or repair work affecting the State occupied space may result in employee health concerns in the work environment.

D. In case Lessor, after notice in writing from the State requiring the Lessor to comply with the requirements of this paragraph in regard to a specified condition, shall fail, refuse or neglect to comply with such notice, or in the event of an emergency constituting a hazard to the health or safety of the State's employees, property, or invitees, the State may terminate this lease without further obligation or at its option, perform such maintenance or make such repair at its own cost and, in addition to any other remedy the State may have, may withhold rent due and deduct the amount thereof, including necessary costs incurred by the State required for the administration of such maintenance and repairs, from the rent that may then be or thereafter become due hereunder.

15. In addition to any painting completed prior to the commencement of this lease, and touch-up painting required after initial occupancy upon receipt of written request from the State, Lessor agrees at Lessor's sole cost and expense to repaint all painted surfaces ([X] interior and [ ] exterior) of the leased premises in accordance with the attached Exhibits "A" and "B". In no event shall Lessor be required to repaint more than once during the first sixty (60) month period of this lease after the painting completed prior to the commencement date, and once during any succeeding sixty (60) month period. Lessor shall, within forty-five (45) days from the giving of any such notice, arrange for and complete the painting. Colors are to be approved by the State. Lessor, at Lessor's sole cost, shall arrange for moving of furniture and equipment prior and subsequent to the repainting, and provide drop cloths, and covers as necessary.
16. The State shall have the right during the existence of this lease to make change orders and alterations; attach fixtures; and erect additions, structures, or signs in or upon the leased premises. Such fixtures, additions, structures, or signs so placed in or upon or attached to the premises under this lease or any extension hereof shall be and remain the property of the State and may be removed therefrom by the State prior to the termination or expiration of this lease or any renewal or extension hereof, or within a reasonable time thereafter.

In the event alterations, fixtures, additions, structures, or signs in or upon the leased premises are desired by State and State elects not to perform the work, any such work, when authorized in writing by the State shall be performed by the Lessor in accordance with plans and specifications provided by State. Lessor agrees to obtain competitive bids from at least three licensed contractors and to contract with the lowest bidder. Lessor further agrees that the overhead and profit for the work shall not exceed fifteen percent (15%) total for Lessor and any general contractor combined. Within forty-five (45) days after receiving Lessor's notice of completion of the requested work and an invoice requesting payment therefor, together with a complete detailed accounting of all costs for each trade, State agree to either reimburse Lessor by a single total payment for the cost of such work; or, with Lessor's prior written approval, State will amortize the cost of the requested work over the remaining term of this lease by increasing the monthly rent by an amount to include principal and interest on the unpaid balance. The interest rate may not exceed the prime rate (the base rate on corporate loans posted by at least seventy-five percent (75%) of the nation’s 30 largest banks) plus two percent (2%) as of the date of the State's written authorization to proceed.

In the event State terminates this lease on or after the end of the firm term, but before the expiration date of the lease, State agrees to pay to Lessor the portion of the principal balance which is unamortized as of the effective date of termination. Said payment shall be a single payment to be made within forty-five (45) days after the effective date of the termination.

17. The State shall not assign this lease without prior written consent of the Lessor, which shall not be unreasonably withheld, but shall in any event have the right to sublet the leased premises.

18. The Lessor agrees that the State, while keeping and performing the covenants herein contained, shall at all times during the existence of this lease, peaceably and quietly have, hold, and enjoy the leased premises without suit, trouble, or hindrance from the Lessor or any person claiming under Lessor.

19. The Lessor reserves the right to enter and inspect the leased premises at reasonable times, and to render services and make any necessary repairs to the premises.

20. If the leased premises are totally destroyed by fire or other casualty, this lease shall terminate. If such casualty shall render ten percent (10%) or less of the floor space of the leased premises unusable for the purpose intended, Lessor shall effect restoration of the premises as quickly as is reasonably possible, but in any event within thirty (30) days.

In the event such casualty shall render more than ten percent (10%) of such floor space unusable but not constitute total destruction, Lessor shall forthwith give notice to State of the specific number of days required to repair the same. If Lessor under such circumstances shall not give such notice within fifteen (15) calendar days after such destruction, or if such notice shall specify that such repairs will require more than ninety (90) days to complete from date such notice is given, State, in either such event, at its option may terminate this lease or, upon notice to Lessor, may maintain occupancy and elect to undertake the repairs itself, deducting the cost thereof from the rental due or to become due under this lease and any other lease between Lessor and State.

In the event of any such destruction other than total, where the State has not terminated the lease as herein provided, or pursuant to the terms hereof has not elected to make the repairs itself, Lessor shall diligently prosecute the repair of said premises and, in any event, if said repairs are not completed within the period of thirty (30) days for destruction aggregating ten percent (10%) or less of the floor space, or within the period specified in Lessor's notice in connection with partial destruction aggregating more than ten percent (10%), the State shall have the option to terminate this lease or complete the repairs itself, deducting the cost thereof from the rental due or to become due under this lease and any other lease between Lessor and State.
In the event the State remains in possession of said premises though partially damaged, the rental as herein provided shall be reduced by the same ratio as the net square feet the State is thus precluded from occupying bears to the total net square feet in the leased premises. "Net square feet" shall mean actual inside dimensions and shall not include public corridors, stairwells, elevators, and restrooms.

It is understood and agreed that the State or its agent has the right to enter its destroyed or partially destroyed leased facilities no matter what the condition. At the State's request, the Lessor shall immediately identify an appropriate route through the building to access the State leased space. If the Lessor cannot identify an appropriate access route, it is agreed that the State may use any and all means of access at its discretion in order to enter its leased space.

Subrogation Waived

21. To the extent authorized by any fire and extended coverage insurance policy issued to Lessor on the herein leased premises, Lessor hereby waives the subrogation rights of the insurer, and releases the State from liability for any loss or damage covered by said insurance.

Prevailing Wage Provision

22. For those projects defined as "public works" pursuant to Labor Code §1720.2, the following shall apply:
   A. Lessor/contractor shall comply with prevailing wage requirements and be subject to restrictions and penalties in accordance with §1770 et seq. of the Labor Code which requires prevailing wages be paid to appropriate work classifications in all bid specifications and subcontracts.
   B. The Lessor/contractor shall furnish all subcontractors/employees a copy of the Department of Industrial Relations prevailing wage rates which Lessor will post at the job site. All prevailing wage rates shall be obtained by the Lessor/contractor from:
      Department of Industrial Relations
      Division of Labor Statistics and Research
      455 Golden Gate Avenue, 8th Floor
      San Francisco, California 94102
   C. Lessor/contractor shall comply with the payroll record keeping and availability requirement of §1776 of the Labor Code.
   D. Lessor/contractor shall make travel and subsistence payments to workers needed for performance of work in accordance with the Labor Code.
   E. Prior to commencement of work, Lessor/contractor shall contact the Division of Apprenticeship Standards and comply with §1777.5, §1777.6, and §1777.7 of the Labor Code and Applicable Regulations

Fair Employment Practices

23. During the performance of this lease, the Lessor shall not deny benefits to any person on the basis of religion, color, ethnic group identification, sex, age, physical or mental disability, nor shall they discriminate unlawfully against any employee or applicant for employment because of race, religion, color, national origin, ancestry, physical handicap, mental disability, medical condition, marital status, age, or sex. Lessor shall insure that the evaluation and treatment of employees and applicants for employment are free of such discrimination.

Lessor shall comply with the provisions of the Fair Employment and Housing Act (Government Code, Section 12900 et seq.), the regulations promulgated thereunder (California Administrative Code, Title 2, Section 7285.0 et seq.), the provisions of Article 9.5, Chapter 1, Part 1, Division 3, Title 2 of the Government Code (Government Code, Sections 11135-11139.5), and the regulations or standards adopted by the awarding State agency to implement such article.

DVBE Participation Requirement

24. Lessor hereby represents and certifies that it has fully complied with all Disabled Veteran Business Enterprise (DVBE) participation goals or has made good faith efforts, as the case may be, as required by Public Contract Code §10115 et seq., and further agrees that the State or its designees will have the right to review, obtain, and copy all records pertaining to the contract. Lessor agrees to provide the State or its designee with any requested relevant information and shall permit the State or its designee access to its premises, upon reasonable notice, during normal business hours for the purpose of interviewing employees and inspecting and copying such books, records, accounts, and other material that may be relevant to a matter under investigation for the purpose of determining compliance with this requirement. Lessor further agrees to maintain such records for a period of three (3) years after final payment under the contract.
Upon completion of this lease, Lessor agrees to submit a final report identifying all DVBEs used in providing services or supplies to this lease. Efforts to include DVBEs in this contract shall continue throughout the lease term and any extensions or renewals hereof involving purchases of materials and supplies by the Lessor.

25. Within fifteen (15) days after occupancy of the leased premises by the State, Lessor shall provide the State with the name, address, and telephone number of an agency or person convenient to the State as a local source of service regarding the Lessor's responsibilities under this lease as to repairs, maintenance, and servicing of the premises and any or all related equipment, fixtures, and appurtenances.

26. Lessor agrees that the rental provided under the terms of Paragraph 4 hereof is based in part upon the costs of the services, utilities, and supplies to be furnished by Lessor in accordance with Paragraph 13 hereof. In the event the State vacate the premises prior to the end of the term of this lease, or, if after notice in writing from the State, all or any part of such services, utilities, or supplies for any reason are not used by the State, then, in such event, the monthly rental as to each month or portion thereof as to which such services, utilities, or supplies are not used by the State shall be reduced by an amount equal to the average monthly costs of such unused services, utilities, or supplies during the six-month period immediately preceding the first month in which such services, utilities, or supplies are not used.

27. In the event the State remains in possession of the premises after the expiration of the lease term, or any extension or renewal thereof, this lease shall be automatically extended on a month to month basis, subject to thirty (30) days termination by either party, and otherwise on the terms and conditions herein specified, so far as applicable. If the last rental amount shown in Paragraph 4 included the amortization of a capital sum expended by Lessor for certain alterations and improvements, as described in a separate paragraph herein, and the capital sum has been fully amortized, the holdover rent shall be reduced by the amount of the monthly amortization. If the State fails to vacate the premises within the notice period and remains for an extended period, additional rent shall be paid and prorated on a thirty (30) day month, based on the actual number of days the State occupies the premises following the effective date of termination.

28. Upon termination or expiration of this lease, the State will peacefully surrender to the Lessor the leased premises in as good order and condition as when received, except for reasonable use and wear thereof and damage by earthquake, fire, public calamity, the elements, acts of God, or circumstances over which State has no control or for which Lessor is responsible pursuant to this lease. The State shall have no duty to remove any improvements or fixtures placed by it on the premises or to restore any portion of the premises altered by it, save and except in the event State elects to remove any such improvements or fixtures and such removal causes damages or injury to the leased premises, and then only to the extent of any such damage or injury.

29. Time is of the essence of this lease, and the terms and provisions of this lease shall extend to and be binding upon and inure to the benefit of the heirs, executors, administrators, successors, and assigns to the respective parties hereto. All of the parties hereto shall be jointly and severally liable hereunder.

30. It is mutually understood and agreed that no alterations or variations of the terms of this lease shall be valid unless made in writing and signed by the parties hereto, and that no oral understanding or agreement not incorporated herein, shall be binding on any of the parties hereto.

31. All janitorial and housekeeping services, custodians, food services workers, laundry workers, window cleaners and security guards provided by Lessor pursuant to the provisions of this lease, shall be in full compliance with the requirements of Government Code (GC) 19134 if applicable, including but not limited to the following:

a) Lessor agrees that service contract agreements for such services will provide employee wages and benefits that are valued at eighty-five (85%) of the State Employer cost of providing comparable wages and benefits to state employees performing similar duties. For these purposes, benefits includes health, dental, and vision benefits and it also includes retirement benefits, holiday pay, sick pay and vacation pay.

b) Lessor shall ensure that each contractor and subcontractor providing such services is provided a copy of the applicable regulations for GC 19134.
c) Lessor agrees to certify on a quarterly basis that all contracts executed by Lessor are in compliance with GC 19134.

d) Lessor agrees to include in the service contract agreements the applicable reporting, audit and termination for breach provisions as described in the applicable regulations for GC 19134.

IN WITNESS WHEREOF, this lease has been executed by the parties hereto as of the date first above written.

STATE OF CALIFORNIA
Approval Recommended

LESSOR

DEPARTMENT OF GENERAL SERVICES
REAL ESTATE SERVICES DIVISION
PROFESSIONAL SERVICES BRANCH

By ________________________________
, Real Estate Officer
Real Estate Leasing and Management Section

Date ________________________________

By ________________________________

Approved

DIRECTOR OF THE DEPARTMENT
OF GENERAL SERVICES

By ________________________________
, Leasing Manager
Real Estate Leasing and Management Section

Date ________________________________
APPENDIX B (Exhibit ‘B’)

California Department of General Services

Outline Specifications
EXHIBIT ‘B’ OUTLINE SPECIFICATIONS

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PROJECT CONTACT: PROJECT NO.: AGENCY: DATE: LOCATION:

Confirmation Statement
I/we have read this Exhibit ‘B’ Specification and understand it is incorporated into, and is part of, this lease. I/we have acknowledged each and every page by placing my/our initials on this cover sheet.

Issue 4-9-09

Initials ____________
DIVISION 1 -- GENERAL REQUIREMENTS

01.00 LESSOR’S RESPONSIBILITIES IN RELATION TO PLANNING

A The Lessor shall, at all times, during initial design and construction and throughout the term of the lease, operate and maintain the facility in accordance with best practices to achieve energy efficiency, sustainability, improved air quality and enable maximum recycling efforts.

B For ease in reading these Specifications, brief summaries of applicable code sections taken from the 2001, California Building Standards Code and the California Access Compliance Reference Manual have been inserted into the appropriate areas (shown in italics). It shall be the responsibility of all users of these Exhibit ‘B’ Specifications to fully research the complete code section(s) as they relate to each architectural, design or construction element of this project. Note: Chapter 11 of the Uniform Building Code (Model) has not been adopted by The State of California for accessibility and therefore does not apply to this project.

C The following brief summary of responsibilities is provided to aid the Lessor, and is not intended to be a complete statement of services to be provided. The lessor shall be responsible for complying with all aspects and requirements of the lease and its exhibits, as well as all statutes, policies and regulations of current and applicable state, federal, city and county codes.

1 Each state lease project is assigned to a team consisting of a Real Estate Officer (REO) and a Space Planner (Planner). All leasing considerations, parking, janitorial, etc., shall be determined by the REO. The Planner is the single point of contact (not the client agency) and shall make determinations concerning space planning, construction costs, construction, code compliance, change orders, final project approval and acceptance.

2 The building Lessor or their representative shall be responsible to provide to the State the following documents or obtain the following approvals at their expense:

a Lessor shall provide accurate drawings depicting the ‘as-built’ condition of the space to be leased including site plan, building common areas and paths of travel necessary for State tenancy. Lessor will be responsible for any rework, design changes, change orders, etc., caused by discrepancies in ‘as-built’ plans provided to RESD for planning and design purposes.

b Provide to the Planner, at the beginning of the project, a current electronic (CAD) as-built drawing, of the area(s) to be leased and a site plan showing parking. The ACAD versions to be used shall be Release 14, 2000, or as approved by the Planner.

c The Lessor shall review all requirements of the Exhibit documents. It is the Lessor’s responsibility to provide copies of Exhibit ‘A’ drawing(s) and Exhibit ‘B’ Specifications to their architect, engineers, consultants and contractors. Exhibits ‘A’, ‘B’, ‘C’ and other applicable exhibits shall be used together and shall be kept at the construction site at all times.

d DVBE Participation Requirements – State law and policy requires that State lease contract must meet or exceed participation goals of 3% Disabled Business Enterprises (DVBEs) for the proposed lease contract. Included in the lease contract amount for DVBE participation is: Tenant improvements;
Janitorial services, maintenance and property management during the firm term of the lease; Capital improvements directly related to the State’s specifications for space; Architectural/engineering/consulting fees which are directly incurred as result of the State’s specifications.

3 Lessor shall provide to the Planner an itemized unit cost construction estimate including all charges: labor, fees, taxes, shipping, permits, inspection, handling, installation and fabrication. Lump sum construction estimates are not acceptable. Three competitive bids are required unless approved by the State.

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<th>Item</th>
<th>Unit Price</th>
<th>Unit Type</th>
<th>Number of Units</th>
<th>Total Cost</th>
<th>Remarks</th>
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<td>Title 24 height</td>
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4 The following improvements shall be provided by the Lessor at no cost to the State:

- Exterior window coverings
- All capital improvements to the building’s core and shell
- Fire sprinkler main loop installed throughout for normal occupancy, including heads in place
- Perimeter and core walls with drywall, taped, textured/sanded and ready for paint
- Electrical service at a minimum of 5 watts per square foot for employee equipment
- Acoustic ceiling tiles and grid (minimum 90 NRC in open areas)
- HVAC and ducting to the space; not interior distribution within the space
- Required entry/exit door(s), assemblies, and public exit corridors
- Code required restroom facilities
- Any demolition of existing tenant improvements
- All improvements that are required per zoning, building, fire, Title 24/ADA and applicable building codes that are related to the building’s core and shell

5 Lessor shall obtain the services of a licensed Architect or engineer as applicable to produce construction documents, which include all components of Exhibit ‘A’ and as further defined in Exhibits ‘B’ and ‘C’. ‘Lessor’s architect shall verify that all requirements of the project are contained in the construction documents provided to the Planner. All documents shall be produced in CAD (Computer Aided Drafting) format, version as specified by the Planner. Drawings shall include, but not be limited to, site plan showing the path-of-travel from the property line (adjacent bus stop if applicable), and access compliant parking to the building entrance, through the building to the suite to be leased, floor plans(s), sections and/or elevations as required to show all project requirements and information regarding code compliant restrooms, door hardware, stairwells or elevators, signage, drinking fountain locations and all electrical, mechanical and/or other improvements relating to the leased space. Use of Exhibit ‘A’ in lieu of Construction Drawings is not acceptable.

a The Architect that completes a site survey and provides a verified disabled access report must have at least an ICBO Access Certification, or be included
on the Division of the State Architect (DSA) access compliance division list of consultants approved for this purpose. Provide approval documentation to Planner. See Exhibit C for forms and procedures.

6 All selected architects, engineers and contractors shall have a current and valid license for their respective discipline, as issued by the State of California.

7 The Lessor shall coordinate with the Lessor and the Department of Industrial Relations, as covered in labor code 1720.2 et seq., to investigate whether the project falls under the requirements of prevailing wage as related to construction labor.

8 Submit State reviewed construction drawings to the local city or county building authority and obtain a building permit.

9 Submit construction drawings to the State Fire Marshal for approval. Provide approval documentation to Planner. See Exhibit C for forms and procedures.

10 Submit construction drawings to the DSA for approval. The Lessor shall obtain, at the Lessor’s cost, certification that the drawings meet the requirements of Title 24/ADA. See Exhibit ‘C’ for forms and procedures.

11 Lessor’s contractor shall provide all submittals, details per Exhibits and as requested by the Planner for approval. Shop drawings of all millwork/cabinetry and special items shall be submitted to the Planner for approval prior to fabrication.

12 At project completion, provide Certificate of Occupancy and other documents to Planner. Refer to section 2.18 of these Specifications.

D Sustainable Criteria

1 This specification addresses issues related to indoor air quality, environmental protection, construction waste management and energy efficiency:

   A Indoor Environment Protection addresses practices and design requirements with the purpose of minimizing indoor air quality problems that might otherwise negatively impact workers and building occupants.

   B Environment Protection intent is to minimize environmental pollution and damage as a result of construction operations and reduce the depletion of environmental resources.

   C Construction Waste Management identifies materials to be recycled or salvaged during construction and sets the overall diversion goal for the project. The minimum standard for state projects is 50% diversion of construction and demolition materials.

2 A The lessor must complete the Sustainability Measures Report prior to occupancy. See Exhibit C for procedures and form.

E For the purpose of determining rent, Square Footage calculations for use on State leased space shall be calculated as follows:

Net usable office area includes all areas assigned to the state agency such as: offices, conference rooms, reception rooms, special use rooms, supply rooms, hallways within the space, laboratories, private restrooms/showers, break rooms,
auditoriums, cafeterias and spaces which can only be used by the state tenant. Net usable office area does not include stairwells, stacks/shafts, janitor closets, mechanical rooms, electrical rooms, general or required restrooms, dedicated public corridors, and public lobbies. Net useable office area is measured from the finished surface of the office side of the corridor and other permanent walls, the dominant portion of exterior walls, and from the centerline of demising walls separating other offices.

01.01 GENERAL PROVISIONS

A Refer to Division 3, Special Provisions, which may expand and detail the project specific requirements.

B Title 24 calculations, including the Certificates of Compliance relating to alterations or additions, shall be furnished to the state for information purposes on demand. Said documents shall be provided at no cost to the state and shall have been approved by the local authority.

C The quarters shall consist of a State lease space, or portion thereof, if so indicated, and appurtenant facilities, complete and ready for occupancy and in accordance with all lease exhibits and these Outline Specifications.

D The State's intent is to achieve adequate standards of quality while avoiding unnecessary alterations, so that in all cases where an existing feature meets requirements specified herein, the Lessor's obligation is only to maintain that feature as it exists.

E The State's intent is that the Exhibit ‘A’ drawings and Exhibits ‘B’ and ‘C’ in combination, be used to provide the basis of information for bidding and construction of this project. In case of conflict or ambiguity between the Exhibits, see Planner for direction; final decision/ direction will be given in writing.

- Exhibit ‘A’ or “Special Provisions” of this specification shall indicate material locations, specialty details, finish and material selections, unique characteristics of this project, etc.

F Wherever reference is made to "State," "Agency," "Department," or other State of California administrative department, it shall be construed to mean "Department of General Services, Real Estate Services Division, Professional Services Branch, here and after referred to as DGS." Any deviations from the Exhibits ‘A’, ‘B’ and ‘C’ of the lease, shall require approval from DGS.

G Any reference in these documents to "plans", "sketch plans", or "as shown on plans" should be construed to mean as shown on Exhibit ‘A’ drawing(s) or described in Exhibit ‘A’- Facility Design Program.

H Construction plans and Specifications for provision of alterations, expansion of building system, including lighting, heating, ventilating, and cooling system as applicable to the construction of the space, shall be furnished to State prior to commencement of construction. Said documents shall be provided at no cost to the State and shall be approved by the local building authority.

I Should the State make comments with regard to Lessor provided construction drawings and Specifications, they shall be construed as advisory only and shall not relieve Lessor from sole responsibility for conformity of the quarters to Exhibits ‘A’, ‘B’, or any other exhibits or attachments to the lease.
J  Lessor shall obtain a building permit for required construction and tenant improvements from the local authority and, upon completion of construction, a Certificate of Occupancy. Lessor shall furnish the RESD project Space Planner copies thereof.

K  If the lessor is unable to obtain a building permit from the local authority, Lessor shall hire at his expense an Inspector of Record to review the project construction for conformance with the plans, specifications, and applicable codes. The inspector shall report directly to the State. A Certificate of Occupancy is required.

01.02 CONSTRUCTION AND CODE CRITERIA

A  These Specifications and design criteria describe minimum standards of quality and construction for premises leased for State use. Construction methods or materials other than those mentioned herein may be acceptable if in the opinion of the State they provide equal appearance and utility.

B  All references to California Code of Regulations (CCR) Title 24 shall be construed as the current edition in effect and applicable at the time local authorities having jurisdiction will be issuing the required permits.

C  Energy Conservation -- One of the Lessor's prime considerations in the development of quarters for the State's use shall be the conservation of energy resources needed to heat, cool, ventilate and illuminate such space along with usefulness, environmental quality, and aesthetic effect.

D  Life cycle cost procedures; consistent with the National Institute of Standards and Technology (NIST) recommended procedures (BLCC) shall be used by the Developer, Architect and/or Engineering Consultants in determining what techniques to use to achieve greater energy efficiency for the facility.

E  The State reserves the right to require the implementation of any future energy option that pays for itself within the firm term of the lease and to participate in any local utilities load management programs.

F  The Developer and Architect and/or Engineering consultants shall comply with CCR Title 24, Part 1 through Part 6.

G  Premises shall include installation and annual servicing of fire hoses and/or extinguishers, in cabinets, located as required by codes as applied by officials responsible.

H  Premises, when completed, shall conform to applicable codes, ordinances, and zoning laws and shall be constructed in accordance with sound engineering practices. The Department of General Services will consider only those facilities that can demonstrate the ability to meet a seismic performance level as set forth in:

1.  1998 or subsequent editions of the California Building Code; or,

2.  1976 or subsequent editions of the Uniform Building Code and the building does not have any one of the enumerated characteristics or conditions listed below:

   a.  Unreinforced masonry elements, whether load-bearing or not; not including brick veneer;

   b.  Precast, prestressed, or post-tensioned structural or architectural elements, except piles;
c. Flexible diaphragm (e.g., plywood)-shear wall (masonry or concrete) structural system constructed pursuant to editions of the Uniform Building Code prior to the 1997 edition;
d. Apparent additions, alterations, or repairs to the structural system made without a building permit;
e. Constructed on a site with a slope with one or more stories partially below grade (taken as 50% or less) for a portion of their exterior;
f. Soft or weak story, including wood frame structures with cripple walls, or is construction over first-story parking;
g. Seismic retrofit of the building, whether voluntary or mandated, whether partial or complete;
h. Repairs following an earthquake;
i. Welded steel moment frames (WSMF) that constitute the primary seismic force-resisting system for the building, and the structure was designed to code requirements preceding those of the 1997 edition of the Uniform Building Code, and the building site has experienced an earthquake of sufficient magnitude and site peak ground motions that inspection is required when any of the conditions of Section 3.2 of FEMA 352 indicate an investigation of beam-column connections is warranted;
j. Visible signs of distress or deterioration of structural or non-structural systems, e.g., excessively cracked and/or spalling concrete walls or foundations, wood dry rot, etc.

Certification of the above requirements must be provided by an independent, licensed structural engineer at the lessor’s expense.

I Premises shall conform to regulations and orders of the State Department of Industrial Relations and the Occupational Safety and Health Act (OSHA), Title 19 CCR and Title 24, as appropriate. Lessor shall also be responsible for all costs relative to said certification including any preliminary plan review as deemed necessary by state. If fire, safety or health hazards are detected either before or after occupancy by the State, the Lessor, at the Lessor’s sole cost and expense, shall correct them.

J Lessor shall also be responsible for compliance with Health and Safety Code Sections 25280-25299.7, relative to operation and maintenance of existing Underground Storage Tanks (UST’s). If the state elects to operate existing UST’s, it shall assume responsibility as specified in the law for maintaining said UST’s except that Lessor shall be responsible for the installation and maintenance of electronic or other sensory devices for monitoring leakage from the tanks.

K Lessor hereby guarantees that the premises, when completed and ready for occupancy, are tenantable. All mechanical, electrical, plumbing, and other facilities and features (including architectural finishes, paint, hardware, doors, floor covering, etc.) are of quality capable of giving satisfactory service in accordance with these Specifications and for the full term of this lease. All labor shall be especially skilled for each kind of work and all workmanship must be thorough and first-class in all respects.

L Emergency Evacuation Plans: Where the State occupies any portion, or all of a building, the Lessor shall provide an emergency evacuation plan(s) for the tenants. The plan shall be coordinated with the tenant agency Emergency Coordinator. In addition to any code required exit signage, lessor shall provide sufficient "key" floor plans to clearly delineate emergency exit routes, corridor located fire extinguishers and fire alarm pull stations. Key plans shall be located in central traffic areas, wall mounted and framed under glass, minimum size 8" x 10".
Title 24/ADA: All State leased spaces, both new and lease renewals, shall comply with all current building statutes, DSA/AC policies, codes, ordinances, and regulations. The requirements of CCR Title 24, California Building Code relative to Access Law Compliance, and Americans with Disabilities Act (ADA), and Uniform Federal Accessibility Standards (UFAS), must be included in the planning of these quarters. All construction work shall be planned to comply with the above mentioned standards. When code requirements conflict with one another, the most stringent code requirement will take precedence. Modifications of existing conditions to reach compliance are required unless the alterations meet the qualifications for ‘Unreasonable ‘Hardship’. For the purposes of this State leased project, an Unreasonable Hardship shall be defined as a condition which effects Right-of-way (path of travel), legal or physical constraints. Hardships are unlikely to be granted for buildings constructed after 1991. A hardship can not be determined by RESD or their client State agencies. A hardship must be applied for at DSA; see Exhibit ‘C’ for form and procedures. Written documentation of DSA determination shall be provided to Planner for records. All such modifications shall be performed at the lessor’s sole expense.

Real Estate Services Division, Professional Services Branch, invites lessors to make preliminary submittals for projects. An informal review will be made to reduce the need for plan changes in later stages of contract document preparation.

CONSTRUCTION MATERIAL DISPOSAL REQUIREMENTS

Lessor shall use site separation method to maintain a minimum standard of 50% diversion of construction and demolition materials from the landfills.

1. Site Separation: Sorting of construction waste on site for delivery to a recycler. For site separation projects, the Lessor will be required to provide a form with weigh tickets, signatures and other forms of validation that reflect the kind and amounts of materials that have been recycled.

2. The lessor shall provide separately marked on-site bins for recycling of wood, plastics, metals, glass, beverage containers, concrete, cardboard, and gypsum board at a minimum. Other items as determined by the project type shall include: paint, asphalt pavement, insulation, and tile/masonry, and carpet. For removal of existing carpet, the lessor shall prepare for pickup for reuse or recycling in an “environmentally friendly” manner based on the type of material and reclamation option selected. Lessor shall contact manufacturers for recycling requirements for both broadloom and carpet tiles.

3. The forms show the format for recycling information to be completed by the Lessor’s contractor prior to construction and at the completion of the project. Should the Lessor wish to use these forms, they may be obtained at the following address: http://resd.dgs.ca.gov/PSB/RealEstate.htm
State of California

Project No.  
___ Approved  
___ Waived  
___ Not Approved  

Staff Initials ________________________

Job Site Recycling and Waste Reduction Plan Form (JSR & WRP)

Please answer the following questions:

1. Project Address _____________________________________________________
2. Name of Project Manager ____________________________________________
3. Phone Number ______________________________________________________
4. Cellular Phone No. ____________________
5. Fax Number _________________________

1. Estimate the amount of waste this project will generate in the waste assessment table on the back of this page.
2. Estimate the types of materials to be recycled, reused and salvaged on the work assessment table that follows.
3. Briefly state how materials will be sorted for recycling, reuse or salvage on the job site.
4. Will this project require the use of sub-contractors. ☐ Yes ☐ No

If yes, briefly state how you plan to inform and ensure participation by the sub-contractors of your Job Site Recycling and Waste Reduction Plan.
PRE-CONSTRUCTION RECYCLING CHECK LIST

Waste Assessment
Identify the materials and quantities that you estimate can be recycled, reused or salvaged. Specify any additional materials that can be recycled, reused or salvaged. Estimate the amount of solid waste generated and disposed in landfill.

<table>
<thead>
<tr>
<th>Material Type</th>
<th>Est. Amount (tons/yards)</th>
<th>Proposed Processing Methods (check all that is applicable)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Recyclable</td>
</tr>
<tr>
<td>Asphalt &amp; Concrete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brick, Tile</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building Materials (Doors, windows, fixtures, etc…)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrugated Cardboard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dirt/Clean Fill</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drywall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Padding-Carpet/Foam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plate Glass/Non-Container</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scrap Metals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unpainted Wood &amp; Pallets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yard Trimmings, Brush, Trees, Stumps, etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Garbage-solid waste trash, rubbish, discarded food</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If no materials are targeted for recycling, reuse or salvage, please state why.

Contractor's Signature ___________________________ Date ____________
POST-CONSTRUCTION RECYCLING CHECK LIST

STATE OF CALIFORNIA

Summary Report Form (SR)  
Submit at project completion

Project No. ______________  
Project Address ______________

1. Please indicate the material type recycled, reused or salvaged and the actual quantities processed from this project. State if the material was recycled, reused or salvaged. Describe the handling procedure or destination of each material. Indicate the actual amount of solid waste produced and disposed in landfill.

<table>
<thead>
<tr>
<th>Material Type</th>
<th>Est. Amount (tons/yards)</th>
<th>Actual Quantities</th>
<th>Handling Procedures/ Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Recyclable</td>
<td>Reusable</td>
</tr>
<tr>
<td>Asphalt &amp; Concrete</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brick/Tile</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building Materials (Doors, windows, fixtures, etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrugated Cardboard</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dirt/Clean Fill</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drywall</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Padding-Carpet/ Foam</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plate Glass/Non-Container</td>
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<tr>
<td>Scrap Metals</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Unpainted Wood &amp; Pallets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yard Trimmings (Brush, trees, stumps, etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Garbage Solid Waste (Trash, rubbish, discarded food, etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If no recycling took place, please explain why.

__________________________________________  __________________
Contractor’s Signature                     Date

Last updated: September 25, 2000

01.04   TOXIC MATERIALS

A    Upon request, Lessor shall provide Material Safety Data Sheets (MSDS) from the Contractor or supplier of any product or item used in the construction of this project, which affects IAQ (Indoor Air Quality).
B  ASBESTOS

1  Lessor shall operate and maintain the below described spaces free of hazard from asbestos containing materials (ACM) as defined in Title 15, Sections 1601 and 2607 of the United States Code. Free of hazard means that after an Asbestos Survey and Evaluation, any asbestos containing materials are determined to be not damaged and an effective Asbestos Operations & Maintenance Program (O&M Plan) exists to minimize damage or disturbance to any ACM.

2  The areas covered under this agreement include:
   a  Space leased to the State and plenums in the same HVAC zone
   b  Common public areas which state employees or its invitees would normally/reasonably use.
   c  Building maintenance areas, utility spaces, and elevator shafts within or servicing areas described, in items a and b above.

3  Damaged ACM means after a visual and physical inspection, asbestos containing materials or assemblies exhibit breakage, delamination, buckling, deterioration, water stains or saturation, or other defect or condition not intended at the time of installation, whether or not the condition occurred intentionally or by accident.

4  Operations and Maintenance includes the following proactive work practices: (1) maintain asbestos-containing materials in good condition, (2) ensure proper cleanup of asbestos fibers previously released, (3) prevent further release of asbestos fibers, (4) monitor the condition of asbestos-containing materials, and (5) perform a risk assessment to classify and document existing and subsequently discovered asbestos containing materials. This program shall be consistent with the intent of recommended guidelines of the U.S. E.P.A.

   a  The Lessor shall provide the State with certification that the areas referred to above are free of asbestos hazards from ACM and submit a copy of the O&M Plan prior to state occupancy. Certification shall be in the form of an ACM Survey and Evaluation Report prepared by a Cal/OSHA Certified Asbestos Consultant. Said survey shall include those areas listed in paragraph 2. Survey requirements consist of a visual walk-through inspection and testing of materials listed in accordance with Table A. "Criteria for Sampling and Recording Suspect ACM". Bulk samples of suspected ACM shall be analyzed by a laboratory certified by the Department of Health Services and recognized by the EPA Quality Assurance Program using the Polarized Light Microscopy (PLM) method. Said Survey and Evaluation Report shall identify all ACM found and recommend abatement procedures. The report is subject to review and approval by the State and the Lessor shall agree to all conditions contained therein.
b If damaged asbestos is found or the physical condition of suspected ACM indicate possible fiber release, air sampling and testing by the Phase Contrast Microscopy (PCM) method and a required response action must be undertaken in accordance with an approved O&M Plan. The O&M Plan shall include conditions for final clearance which states that asbestos fiber concentrations of 0.010 f/cc of air or greater requires further testing by the Transmission Electron Microscopy (TEM) method.

c The O&M Plan must require that an average concentration of air is below .010 fibers per cubic centimeter (f/cc.) as determined by Phase Contrast Microscopy (PCM) using NIOSH 7400 method. Transmission Electron Microscopy (TEM) testing will be mandatory if samples tested using PCM analysis indicate greater than 0.010 f/cc of air. Air concentrations for TEM shall not exceed 70 structures per millimeter squared (s/mm²) or 0.010 f/cc. as determined using NIOSH 7402 method. A Cal/OSHA Certified Asbestos Consultant shall determine the number and locations of air sampling tests.

5 If said premises were constructed after 1979, Lessor shall provide RESD with written documentation stating that the building contains no ACM including any interpretation or conclusions drawn and findings of fact. At State's request, Lessor, at his expense, shall provide verification by a Cal/OSHA Certified Asbestos Consultant.

6 If at any time during the term of this lease or during any extension or renewal hereof, previously unidentified ACM hazard is discovered or airborne asbestos fibers above 0.010 f/cc level are found to be entering the state-lease space, the Lessor shall immediately, at Lessor's sole cost and expense, control such release and perform abatement of all damaged ACM determined to be affecting the state-leased space. Response actions and air monitoring shall be accomplished per Article (4b) above.

7 Lessor shall perform asbestos notification as required by Chapter 10.4 of the Health and Safety Code and shall guarantee that all abatement work as required under the conditions of this lease is performed by a contractor licensed and asbestos certified by the Contractor's State License Board and registered as an asbestos contractor with the Division of Occupational Safety and Health. The State reserves the right to establish consultant oversight of any asbestos related work program at its expense.

8 Additionally, Lessor shall be responsible for any and all direct or indirect costs associated with the abatement of the above described ACM which include but are not limited to the actual costs to the Lessor for ACM abatement, and for all required monitoring reports before, during, and after abatement. In effect, all costs shall be borne by the Lessor that are in any way associated with the abatement of ACM from the Lessor's building including clean up of contaminated state-owned equipment, furnishings, and materials. Copies of the air monitoring reports shall be furnished to the state together with certification by a Cal/OSHA Certified Asbestos Consultant that the area is free of hazard from ACM.

9 If it is determined, by the State, that for safety reasons, State employees should be relocated at any time prior to or during the abatement of ACM, the Lessor shall provide comparable accommodating space (at no cost to
the state) throughout the abatement process. A qualified representative of Cal/OSHA shall make said determination. The Lessor specifically agrees to pay for all costs associated with this move or to reimburse the state if the state paid for this cost, including all reasonable administrative costs, cost of moving or renting furniture, data processing, and telephone equipment.

10 In the event, after written notice is provided by the State, the Lessor fails, refuses, or neglects to diligently pursue abatement of above described hazard from ACM; the State may effect such abatement. In addition to any other remedies the State may have, it may deduct all reasonable costs of such abatement and all costs associated in any way with the abatement of the above described ACM from the rent. These costs may then be or thereafter become due throughout the term of this lease. For this purpose and as a condition of this lease agreement, the Lessor shall obtain an EPA generator number and grant license to the State for its use.

11 In addition to any other remedies it may have, in the event the Lessor fails to diligently pursue abatement of hazard from ACM, as required under the provisions of this lease, the state may, by notice in writing, terminate this lease. Lessor shall be liable to the State for all expenses, losses, and damages reasonably incurred by the State as a result of such termination: including but not limited to additional rental necessary to pay for an available, similar replacement facility. This rental shall extend over the period of what would have been the remaining balance of the lease term plus any option periods, costs or any necessary alterations to the replacement facility, administrative costs, and costs of moving furniture, data processing and telephone equipment.

12 The Lessor shall indemnify, defend, and hold the State of California, its officers, and employees harmless from and against any and all losses, damages, judgments, expenses (including court costs and reasonable attorney fees), or claims whatsoever, arising out of, or in any way connected with or related to, directly or indirectly, the presence of hazard from ACM within the state-leased space or the building in which the leased premises are located.
### TABLE A

#### CRITERIA FOR SAMPLING AND RECORDING SUSPECT ACM

<table>
<thead>
<tr>
<th>AHERA CLASS</th>
<th>MINIMUM NUMBER OF SAMPLES (e) (f)</th>
<th>SPEC #</th>
<th>SPECIFICATION NAME</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>N/A (a)</td>
<td>88888</td>
<td>NO SUSPECT ACM (ENTIRE BUILDING)</td>
<td>NONE</td>
</tr>
<tr>
<td>M</td>
<td>(h) (i)</td>
<td>99999</td>
<td>OTHER SUSPECT MATERIALS</td>
<td>(b)</td>
</tr>
<tr>
<td>M</td>
<td>1 (g)</td>
<td>02080</td>
<td>LOOSE DEBRIS</td>
<td>CF</td>
</tr>
<tr>
<td>M</td>
<td>1 (g) (m)</td>
<td>02085</td>
<td>SOIL DECONTAMINATION</td>
<td>SF</td>
</tr>
<tr>
<td>M</td>
<td>1</td>
<td>04565</td>
<td>MASONRY FIREBRICK</td>
<td>SF</td>
</tr>
<tr>
<td>M</td>
<td>N/A (i) (j)</td>
<td>06120</td>
<td>TRANSITE SIDING</td>
<td>SF</td>
</tr>
<tr>
<td>M</td>
<td>N/A (j)</td>
<td>06125</td>
<td>TRANSITE (SHEET)</td>
<td>SF</td>
</tr>
<tr>
<td>S</td>
<td>3-5-7 (d) (e) (i)</td>
<td>07210</td>
<td>BUILDING INSULATION (THERMAL)</td>
<td>SF</td>
</tr>
<tr>
<td>S</td>
<td>3-5-7 (c) (e) (i)</td>
<td>07220</td>
<td>BUILDING INSULATION (ACOUSTIC)</td>
<td>SF</td>
</tr>
<tr>
<td>S</td>
<td>3-5-7 (c) (e) (i)</td>
<td>07250</td>
<td>FIREPROOFING (SPRAYED)</td>
<td>SF</td>
</tr>
<tr>
<td>M</td>
<td>1</td>
<td>07255</td>
<td>FIREPROOFING (PANELS)</td>
<td>SF</td>
</tr>
<tr>
<td>M</td>
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#### LEGENDS:

- **AHERA CLASS**
  - S = Surfacing Material
  - M = Miscellaneous
  - TSI = Thermal System

- **UNITS**
  - SY = Square Yard = 9 square feet
  - SF = Square Feet
  - SQ = Square (roofer’s square) = 100 square feet
  - LF = Linear feet
  - EA = Each
  - CF = Cubic feet
  - CY = Cubic Yard = 9 cubic feet (not used in this contract)
TABLE A
(Continued)

NOTES FOR TABLE A:

(a) Reserved exclusively for entire buildings with none of the materials listed on this table.
(b) Contact DSA. Inspector to assign.
(c) 0-1000 SF = 3; 1000-5000 SF = 5; >5000 SF = 7
(d) Per thermal system, or 1 sample per patch > 6 LF or SF.
(e) Add 1 QC sample per 20 samples.
(f) Unless sampling would damage functional integrity.
(g) Per homogeneous ACM source.
(h) Inspector to determine appropriate number of samples.
(i) Provide separate sample analysis for each component of an assembly.
(j) Criteria for Assuming Suspect ACM:

<table>
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<th>SPEC #</th>
<th>BUILDING MATERIAL</th>
<th>CONDITIONS TO_ASSUME POS. ACM MATERIAL</th>
<th>CONDITIONS TO_SAMPLE MATERIAL</th>
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(k) Chilled water lines should be classified as low temperature. Domestic hot water, steam or high-pressure steam and condensate lines should be classified as high temperature.
(l) Date of material, based on facility personnel testimony, building construction records, or surveyor’s professional judgement(m) Record quantity in terms of extent of surface contamination.
(n) Individual flooring tile and mastic patches of less than 6 SF need not be sampled but should be reported as Assumed Positive ACM in the Material Note as a component of a material assembly.

C LEAD

1 Lessor shall maintain premises free of hazard from Lead Containing Materials (LCM) whether said hazard is caused by a deteriorated condition of said LCM or by dust generated by disturbance of same for the purpose of removal, alteration, modification, etc. Paint chip samples, and samples of other suspect LCM’s shall be collected by a DHS Lead Certified Project Designer for laboratory analysis to determine lead content.

2 In the event LCM removal is required, an independent Certified Industrial Hygiene Consultant shall be retained by lessor to inspect quality of work for compliance with applicable regulations, perform air monitoring, final clearance visual inspection, wet wipe sampling/lab analysis, and ensure proper handling/disposal of hazardous waste.
3 All conditions as referenced in the preceding Section 01.03 A, Asbestos, shall apply in like manner, generally substituting the word lead for asbestos exclusive of the cited asbestos regulations. The following Codes and Titles shall apply to the presence of LCM as pertinent and applicable.

- CCR T8, Sec 1532.1 (CAL/OSHA Construction lead Standard)
  - Sec 1529 (CAL/OSHA Asbestos in Construction Standard)
  - Sec 1509 (CAL/OSHA Injury & Illness prevention Program)
  - Sec 1510 (CAL/OSHA Construction Code of Safe Practices)
  - Sec 1514 (CAL/OSHA Personal Protection Equipment)
  - Sec 5194 (CAL/OSHA Hazard Communication Standard)
  - Sec 5144 (CAL/OSHA Respiratory Protection Standard)

- Title 22, CCR Sec 12601 (c) (d) Clear & Reasonable Warnings
- Title 22, CCR Div 4.5, Ch 10, 11, 13, 18 Disposal of Haz Waste
- 42 USC, 7409 7601 (a) clean Air Act
- Title X, Lead-based Paint Hazard Reduction Act of 1992
- EPA Interim Guidance on Lead-based Paint, Contaminated Dust and Soil (pending promulgation of TSCA Title IV, Sec 403 rule)
- CA Health & Safety Code Sec 429.16 Accredited Training for Lead Work
- Title 17 CCR, Sec 35001, Individuals in Lead-Related Construction Work
- 50FR 2554, EPA, Sec 50.12 Ambient Air Quality Standards for Lead

DIVISION 2 -- DESIGN REQUIREMENTS

02.00 FLOOR CONSTRUCTION AND FINISHES

A Concrete floor construction is the standard for comparison. Floors of other material may be acceptable provided its use does not produce or transmit sound or vibration to a greater degree than a 4” reinforced concrete slab.

1 Lessor shall provide certification that the surface tolerance of the floor area to be leased, as a result of field conditions, in no case exceed more than ¼ inch in 10 feet from a true flat plane.

2 Slopes and floor surfaces shall be within industry standards for field conditions, and shall not exceed aforementioned tolerance. A licensed contractor in the appropriate trade shall provide said certification. Floor tolerance measurement shall be accomplished by use of laser leveling equipment or straightedge method. Contact Planner or their designee for site review of floor tolerance measurements.

3 If floor is out of compliance, leveling must be achieved with high strength concrete topping compound: Ardex, Inc., K-500, Hacker Ind., Firm Fill 4010, Maxxon, Level-Right, or approved equal applied per manufacturer’s recommendations.

B Concrete floors in janitor closets; heater or utility rooms shall be cleaned and treated with epoxy coating. Office areas throughout shall have carpet or other floor covering with 4” top set base, per Exhibit ‘A’, unless otherwise specified. Floor covering shall extend under counters and cabinets. Colors and patterns shall be as selected or approved by state.
C  Lessor shall perform a quantitative moisture test on concrete subfloor before installation of any flooring product, employing the use of anhydrous calcium chloride test. The test shall be conducted in the space with all windows closed and has been maintained at a constant temperature of 70 degrees for a minimum of 72 hours. Concrete floors/slabs shall be tested for maximum allowable moisture content based on flooring manufacturer’s recommendation for the type of flooring to be installed. Flooring shall not be installed against manufacturer’s installation instructions. Should the moisture test results not meet the manufacturer’s recommendation, the concrete shall be sealed with a product, which meets indoor air quality requirements, is recommended by the manufacturer and will effectively perform with adhesives.

D  Acceptable Carpet Types, either broadloom or carpet tiles, shall meet the requirements below:

“All carpet shall meet California Gold Sustainable Carpet Standard certification and provide proof of certification in submittals and upon delivery of materials. See www.green.ca.gov/EPP/Standards for more information.” The only exemption to this standard is when patching or repairing within an existing field of carpet when not possible to match existing patterns with certified products and outlined in Exhibit “A”:

1  Level loop, textured loop, level-cut, or level-cut/uncut pile texture and maximum pile height of ½” per CBC Section 1124.3, see figures A and B below.

2  Carpet edges shall comply with CBC Section 1124B.3: Changes in level up to ¼ inch vertical and without edge treatment see Figure A and for changes in level between ¼ inch and ½ inch shall be accomplished by means of a ramp that complies with Figure B.

3  Random graphic pattern loop Non-generic branded, 6 or 6,6 Nylon face yarn with inherent static control.

4  Broadloom loop pile carpet shall have inherent static control capability to assure a maximum 3.5 KV rating at 20% relative humidity and 70°F as measured by AATCC-Test Method 134.

5  Anti-microbial properties shall be used for healthcare, senior care or childcare and ‘clean’ areas.

6  All carpet shall be installed per manufacturer’s guidelines. Firm cushion installation that complies with CBC Section 1124B.3 is also applicable. The carpet shall be securely attached; have a firm cushion, pad or backing; and have a level loop, textured loop; level-cut pile or level-cut/uncut pile texture. The maximum pile height shall be ½ inch.

7  Pattern and color as per drawings or as provided by the Planner.
The backing shall have a 10-year guarantee against, tuft pull and zipperig, and surface wear shall not be more than 10% within 10 years.

All adhesives used in this project shall be non-toxic, low odor, solvent free and shall have no toxic vapors and contain no carcinogenic materials.

All doors in carpeted areas shall be undercut sufficiently to permit free swinging.

Carpeting must conform to Federal Occupation, and Safety and Health regulations concerning fire proofing.

Carpet shall be installed in accordance with the Carpet and Rug Institute CRI 104, Standard for Installation of Textile Floor Covering Materials. The installation shall be guaranteed against bubbling, wrinkling, stretching/shrinking, opening seams, or other evidence of poor materials and workmanship for a period of two years following installation. This guarantee shall cover normal wear and tear and note deficiencies occurring as a result of damage, negligence and/or alterations. The materials shall be guaranteed against wear, delamination, tuft bind and lightfast for a period of 10 years. The material shall remain colorfast as a result of atmospheric contaminants for a period of 5 years after installation.

Carpet shall be maintained in good condition per manufacturer’s guidelines. It is recommended by the State that the lessor order additional carpet of the same dye lot for future repairs or replacement of damaged carpet.

**BROAD LOOM:**
- Tuft bind for broadloom shall be 6.25 lbs., ASTM 1335
- All scraps 12" square or larger shall be bundled and turned over to the state.
- Minimum 26 - 28 oz/sq. yd face yarn weight, or above.
- Density: 5800 minimum
- Density = 36x face weight ÷ pile thickness

**CARPET TILE:**
- Minimum 17 oz/sq. yd face yarn weight, or above.
- Tuft bind strength shall be minimum 10 lbs.
- Density: 5000 minimum
- Warranty edge ravel for 10 years

Floors in toilet rooms shall be of nonabsorbent material impervious to moisture such as terrazzo, ceramic tile, or approved equal material with 4" minimum base.

Ceramic Tile Flooring shall have a coefficient of friction of at least 0.6 per ASTM C1028 (0.8 % on sloped surfaces steeper than 6%). Unless otherwise noted by Planner, provide 2" x 2" slip resistant floor tile with 6" matching ceramic base, include all inner and outer corner and trim pieces. Wall tile shall be 4"x 4" glazed ceramic tile. All adhesives, mastics, grout and components shall be approved by the FEPA.E.1.
G Vinyl Composition Tile, shall meet ASTM F 1066, FS SS-T-312B, Type IV, Composition 1, Class 2, 12" X 12" having uniform thickness of 1/8" with square true edges of manufacturer’s standard color and pattern as selected from Armstrong "Imperial Excelon," Azrock "Custom Cortina, Tarkett "Signals" or approved equal. Product must comply with local regulations controlling the use of volatile organic compounds (VOC’s) Provide one carton (40 pieces) of additional matching floor tile.

H Resilient Flooring shall have a coefficient of friction of at least 0.6 per ASTM D2047. It shall be installed in strict accordance with manufacturer’s approved installation instructions using the appropriate recommended 100% solvent free adhesive.

I Exposed concrete floors are not acceptable in toilet rooms or showers.

02.01 EXTERIOR WALLS

A Exterior walls, including door and window assemblies, shall be constructed or processed so that they are weatherproof. Seal all cracks that allow outside air to penetrate the building’s envelope.

B Exterior walls shall be insulated such that the heat transfer values from the wall to the occupied space complies with CCR Title 24, Part 1 through Part 6.

02.02 INTERIOR WALLS AND PARTITIONS

A Walls and partitions shall be ceiling height unless otherwise noted on Exhibit ‘A’ or Division 3 ‘Special Provisions’. Subject to code limitations, those indicated as new partitions may be wood or metal stud with plaster or gypsum wallboard or other construction of equal sound retardant value (minimum 32 sound transmission class (STC). Textured finish on new partitions is not acceptable unless otherwise noted by the state. Single panel partitions may be used only if so noted on plan or in Division 3 of these specifications.

1. Where wood is used for framing, the lumber shall originate from certified sustainable forests. Provide certification from the Forest Stewardship Council or SmartWood (A voluntary third party certification in conformance with Scientific Certification System (SCS) that timber harvested meets forest management and ecological standards.)

2. Particle Board: When using particle board, the Lessor’s contractor may use one of the following types: Wheat board or particle certified from sustainable forests.

B Construction of equipment rooms and toilet rooms shall be such as to prevent transmission of sound or vibration to office areas, minimum sound rating of 50 STC (sound transmission class) as set forth in ASTM E90. Access to mechanical rooms shall not be through office areas.

C Provide 4’ high wainscot of equal material at plumbing fixture walls, walls within water closet compartments, and walls within 24” of the front and sides of urinals. New walls in restrooms, showers, (wet areas), shall be non-absorbent ‘green’ board.

D Glazed openings in office partitions shall be clear and meet all applicable code requirements; wire, tempered, safety, etc.
E Provide clear, unobstructed space for all paths of travel including columns, fire extinguisher cabinets, and pipes, etc.

**NOTE:** THIS DRAWING DEPICTS EXTREME CONDITIONS. 44" IS THE REQUIRED MINIMUM WIDTH. THIS DRAWING IS INCLUDED TO SHOW MAXIMUM ALLOWABLE PROTRUSIONS.

02.03 ROOF AND INSULATION

A Roof shall be weathertight and provided with suitable drainage system that will effectively dispose of roof water without interfering with use of premises.

B Roof shall be insulated such that the heat transfer values from roof to occupied area complies with CCR Title 24, Part 1 through Part 6.

C Lessor’s contractor shall purchase roofing products as recommended by the FEMP which conserve energy (within budgetary constraints).

02.04 ACOUSTICAL CEILINGS

A Ceilings of office areas including reception, corridors, and office storage areas shall have acoustical ceilings of "T" bar systems with acoustical lay-in panels or other approved material with equivalent acoustical qualities. Ceiling heights shall be a minimum of 9'-0" and a maximum of 12'-0". In general, excessive ceiling heights producing deep, well-like rooms are to be avoided.

02.05 DOORS

A The formaldehyde emission level of all new doors shall not exceed 20 ppb.

B All interior doors shall be of minimum dimension 3'-0" x 6'-8" x 1-3/4" thick, flush solid core wood. Doors with mortise locksets shall be solid core construction. Face veneer shall be rotary cut book-matched premium birch, maple or beech suitable for stained or natural transparent finish. All double doors to be “bookmatched”. Lessor may submit, as an alternate, his established building standards for State approval.

C Glass view panels in interior doors shall be minimum 3/16" clear float glass, tempered as required by code.
D Fire rated door and frame assemblies shall be installed where noted or as required by code. Doors and frames shall bear Underwriters Laboratory (UL) label for required fire resistive rating. Modification of labeled assemblies will be subject to inspection and approval by the Office of the State Fire Marshal who may require re-testing and/or re-certification.

E Doors separating conditioned and nonconditioned space shall be weatherstripped or gasketed to effectively and reliably limit air infiltration. Adhesive foam-type or felt weatherstripping is not acceptable.

F Thresholds shall comply with CBC Section 1133B.2.4.1: The floor or landing shall not be more than ½ inch lower than the threshold of the doorway. Change in level between ¼ inch and ½ inch shall follow figures A and B in Section 02.00, paragraph D in this specification. Provide internal, associated UPS so that the shutter can be opened by tenant staff.

G Where indicated on plans, or required by code, provide a manually operated rolling counter steel fire shutter bearing a UL 3/4 hour, "C" label min. Emergency operation shall be by automatic fire release device with adjustable time delay, 45 seconds. Release shall be activated by smoke detector(s) as required by code.

H Automatic entrance and elevator doors: Automatic entrance doors shall comply with the door protective and reopening requirements of CBC Section 1133B.2: Doors closed by automatic means shall be provided with a door-reopening device that will function to stop and reopen an elevator car door and adjacent hoistway door in case the car is obstructed while closing. This reopening device shall also be capable of sensing an object or person in the path of a closing door without requiring contact for activation at a nominal 5 inches and 29 inches above the floor. Door- reopening devices shall remain effective for a period of not less than 20 seconds; and door requirements of Section 1133B.2.3.2: When an automatic door operator is utilized to operate a pair of doors, at least one of the doors shall provide a clear, unobstructed opening width of 32 inches with the door positioned at an angle of 90 degrees from its closed position.

I All doors shall be signed in compliance with section 02.09 paragraph D Signs, of this Specification.
LEVEL MANEUVERING CLEARANCE AT DOORS

NOTE: Provide 48" clear maneuvering distance between any configuration of doors in series.

02.06 HARDWARE

A Provide lever type hardware to comply with Title 24 Access and ADA requirements. Locksets shall be Schlage "D" series, "Rhodes", "Corbin," or equal. Latchsets shall be Schlage "AL" series, "Saturn" or equal. Provide pin tumbler locks on doors between public corridors and office areas, and as noted on plans. Locksets and latchsets shall be "Schlage," "Corbin," or approved equal. Doors providing access to quarters, isolated storage rooms, and other doors designated to be provided with a lock, shall have Schlage "D" Series or equal; interior office doors may have Schlage "AL" series latchsets or equal. Key locks shall be placed on all plumbing chase access doors, electrical panels, and as directed by State.

B Mounting height of latching hardware/ hand-activated door opening hardware shall be centered between 30" to 44" A.F.F. per CBC Section 1133B.2.5.1. This section describes types of hardware options and how they are to be used. Refer to the aforementioned section for description of hardware types, their use and operation.
C Pressure to operate exterior doors shall not exceed 8.5 lbs., interior doors shall not exceed 5 lbs., and fire rated doors shall not exceed 15 lbs., per CBC Section 1133B.2.5.1. Some tolerance for field conditions as required to insure latching is acceptable, not to exceed two (2) additional pounds for this requirement, indicating 7 lbs. for interior doors and 10 lbs. for exterior doors. Refer to the aforementioned section for other door types and their allowable pressure.

D All hardware shall meet the requirements of CBC Sections 1133B.2.1, 1133B.2.5.1 and 1003.3.1.8: Regardless of the occupant load served, exit doors shall be operable without the use of a key or any special knowledge or effort in the direction of egress.

E All building common area, lobby or required exits must comply with CBC 1003.3.1.8. Place a sign on or adjacent to the door stating “This door to remain unlocked whenever the building is occupied”. This can be achieved by use of a lock or latch that is always operable from the inside without the use of a key or any special knowledge or effort.

Exit devices: Panic hardware shall comply with UBC Standard 10-4 and shall be mounted between 30” and 44” above finished floor surface. The unlatching force shall not exceed 15 lbs. applied in the direction of travel. Panic hardware shall comply with CBC Section 1003.3.1.9, which is 8lbs. When allowed in writing by the State Fire Marshal, this may be increased to 15 lbs. maximum. When pressures are allowed to exceed 15 lbs. by written authority, a power-assisted door opener shall be placed on the door(s).

F Furnish and install all hardware as required for a complete assembly. The work shall include, but is not limited to, locks, latches, door butts with non-removable pins on out swinging exterior doors, and door stops. Where indicated on plans, the work includes metal thresholds, metal kick plates, metal push plates, single or double acting self-closing gravity operated gate hinges. Key all locksets as directed by the State. The keying shall be a minimum three level systems.

G Provide latchsets at all interior doors unless otherwise noted on plans.

H Provide adjustable door closers on entrance doors, doors to toilet rooms and their vestibules, and on other doors where noted on the plan(s). Provide minimum 10” high kick plate (or other impact resistant surface) on ‘push’ side of doors with closers.

I Floor stops shall not be located in the path of travel or beyond 4” maximum from walls. Flush mounted door stops/drop bolts are prohibited.

02.07 MILLWORK

A Provide new cabinet work as shown and where indicated on plan. Manufacture items per the current edition of the Woodwork Institute of California (WIC) "Manual of Millwork" standards for "Custom Grade" millwork. Furnish WIC Certified Compliance Certificate. Each item of casework and plastic laminate counter top shall bear WIC Certified Compliance Grade Stamp.

B Cabinets shall be of sizes and types indicated on the Exhibit ‘A’. Base cabinets shall have one row of drawers and one adjustable shelf below with hinged doors unless noted otherwise. Provide a 4” toe space at base cabinets. Upper cabinets shall have two rows of adjustable shelves and hinged doors unless noted otherwise.
C Counter tops and cabinets shall be covered with plastic laminate at all exposed surfaces. Counter tops shall be self-edged unless otherwise noted. Counter tops with sinks shall be fully formed and have a no-drip, bull-nose edge, and an integral cove splash. All counter tops shall have a back and side splash unless otherwise noted. Sinks shall have a sanitary metal rim or be a self-rim stainless steel sink. Other materials may be submitted to the state for approval.

D Shelving units shall be a minimum of 3/4”, white melamine, per WIC Specifications. Cover exposed edges with plastic laminate or hardwood edgebound.

E Face of millwork to be high-pressure decorative plastic laminate: NEMA LD-3 grades as required by WIC Specifications. Use Formica, Wilsonart, Nevamar, or equal, subject to approval by state.

F Cabinet and Drawer hardware: Provide bullet tip hinges, flush, or offset, magnetic catches, and wire pulls plated to match hardware. Provide U shaped wire pulls or touch-latch at all accessible casework or equally accessible pull hardware.

G The formaldehyde emission level shall not exceed 20 ppb for all cabinetry and millwork materials.

H Base Cabinets containing sinks shall be fully accessible. Unless otherwise noted, provide cabinet doors to conceal clear space below.

I At new or remodeled sink counters, provide counter top height at 34” above finished floor with 30” wide clearance under sink. A workspace at sink locations is required. The workspace shall be 34” high and a minimum of 36” wide, with 27” clear from under counter to floor. The worksurface can be located on the left or right of the sink.

J Existing counters (sink, reception, etc.) may be modified to meet the 34” height requirement, if shown/noted on plans; if ‘modification’ is not shown, replace the counter with new. Counters must be not less than 66” in width or 5% of the entire counter. If a writing surface is needed, the surface shall be 28” – 30” high.

02.08 PAINTING/WALLCOVERING/SEALANTS

A Water-based paints shall not be formulated with aromatic hydrocarbons, formaldehyde, halogenated solvents, mercury or mercury compounds, or tinted with pigments of lead, cadmium, chromium VI, antimony and their oxides.

B When doing work such as painting, wallcovering or other work, ensure that materials used do not emit toxic fumes.
C Colors shall be as selected or approved by the state.

D Existing Surfaces (unless otherwise approved by the Planner).
   1 Interior walls and ceilings and painted sash, doors, and trim shall be in clean, newly painted condition.
   2 Walls and plaster or gypsum board ceilings shall be finished in latex semi-gloss stipple enamel.
   3 Painted doors and trim shall be finished in latex semi-gloss enamel.
   4 Acoustical Tile shall be finished with nonbridging paint "Off-White" when required on plans.
   5 Stained or natural finished wood shall be finished with sealer and lacquer.

E New Surfaces
   1 New partitions without factory finish shall be painted with one coat of primer/sealer and two finish coats of the best quality, latex, semi-gloss enamel.
   2 Painted doors and trim shall be latex semi-gloss enamel.
   3 Stained or natural finish wood shall be finished with sealer and two coats lacquer. They shall be finished using non-toxic, water based, urethanes or similar environmentally sensitive products.

F Where non-matching contiguous painted surfaces result from preparation of the State's quarters, matching paint shall be applied extending to natural break points of the surfaces in question.

G When wallcovering is used, the selected material shall be ‘breathable’ in nature; allowing the substrate access air, helping to avoid mold and bacteria development. All adhesives used shall be, non-toxic, low in VOC emissions and shall be as recommended by the manufacturer.

H Sealants: Interior sealants shall not contain mercury, butyl rubber, neoprene, SBR (styrene butadiene rubber), nitrile, aromatic solvents (organic solvent with a benzene ring in it’s molecular structure), fibrous talc or asbestos, formaldehyde, halogenated solvents, lead, cadmium, hexavalent chromium, or their components.
A Toilet Room Accessories –

1 Each toilet room shall include paper towel holder(s), waste receptacle(s), and soap dispenser(s). Each women's toilet room shall include a coin-operated sanitary napkin dispenser; each stall shall include a feminine napkin disposal unit and folding purse shelf. Each toilet stall shall include: continuous paper flow toilet paper dispenser capable of holding two rolls (Dispenser shall have theft and vandal resistant spindles and locking controls), toilet seat cover dispensers, inside locking device (u-shape handle on both sides of door, slide latch; no thumb turn) and a coat hook. Toilet paper and feminine napkin disposal units located on the grab bar side of an accessible toilet room or stall shall not project more than 3" from the finished wall surface nor be located closer than 1½" clear of the tangent point of the grab bar, neither shall be located above the grab bar. The stall(s) shall have a self-closing door. In existing conditions, where the stall size and all required accessible components, except for the flush valve location, meet Title 24/ADA, an automatic flush valve may be added.

### MOUNTING HEIGHTS FOR:

<table>
<thead>
<tr>
<th></th>
<th>DIMENSIONS IN INCHES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toilet centering from face of wall</td>
<td>18</td>
</tr>
<tr>
<td>Toilet seat height/dimensions to top of seat</td>
<td>17-19</td>
</tr>
<tr>
<td>Grab bar height (side)</td>
<td>33</td>
</tr>
<tr>
<td>Toilet paper in front of toilet/19” to ctr., min. from floor</td>
<td>12 Max. (from edge of toilet)</td>
</tr>
<tr>
<td>Napkin disposal in front of toilet</td>
<td>12 Max.</td>
</tr>
<tr>
<td>Dispenser; mirror height to bottom of reflect. surface</td>
<td>40 Max.</td>
</tr>
<tr>
<td>Lavatory/sink top height</td>
<td>34 Max.</td>
</tr>
<tr>
<td>Lavatory/sink knee clearance</td>
<td>27 Min.</td>
</tr>
<tr>
<td>Urinal lip height – extension from wall 14” min.</td>
<td>17 Max.</td>
</tr>
<tr>
<td>Urinal flush handle height</td>
<td>44 Max.</td>
</tr>
<tr>
<td>Drinking fountain bubblier height</td>
<td>36 Max.</td>
</tr>
<tr>
<td>Drinking fountain knee clearance</td>
<td>27 Min.</td>
</tr>
<tr>
<td>Ramp/stair handrail</td>
<td>34-38</td>
</tr>
<tr>
<td>Coat hooks</td>
<td>48 A.F.F.</td>
</tr>
<tr>
<td>Panic Bars</td>
<td>30 – 44</td>
</tr>
</tbody>
</table>

The highest part of all controls, dispensers, receptacles or other operable equipment, the maximum A.F.F. installation height shall be 48", **(40 in toilet rooms)**
2 Toilet Room Partitions -- New toilet stalls indicated in the Exhibit ‘A’ shall be manufactured using a minimum of 50% recycled density polyethylene plastic coloring and flame retardant agents that are both recycled and recyclable. If re-use of toilet partitions is indicated on the Exhibit ‘A’, existing metal partitions shall be electrostatically painted.

3 Toilet stalls for people with disabilities shall have a slide bolt door latch (flip-over latch, sliding or other device not requiring pinching or turning), wire pulls on each side of the door and self-closing hinges. Door hardware shall be mounted at 30 – 40 inches A.F.F. Doors at front entry stalls shall have 32” minimum clear width when the door is open 90°. Doors at Side entry stalls shall have 34” minimum clear width when the door is open 90°.

4 Provide privacy screen at all new construction urinal locations – screens to match toilet partitions. For existing conditions, place urinal screen at Title 24/ADA urinal(s).

5 Mirror: Provide mirror with attached shelf below at each lavatory. Two or more lavatories may have continuous mirror and shelf.

B Sunlight and Privacy Control -- Equip windows and interior glazed openings, unless otherwise noted, with horizontal or vertical blinds or other Real Estate Services Division approved device for privacy. When necessary in sun control situations, the following solutions may be used: sunlit windows and glazed openings shall have exterior overhangs, fins, solar screens, reflective glass coatings, reflective glass panes, or other Real Estate Services Division approved device for sun control. A daylighting system (with provision for direct sun control) is acceptable. Confer with Planner for direction.

C When the State occupies an entire building, provide Knox-type box near entrance, or as designated by Planner, to building which has keys, maps, instructions, or other entrance items which will aid the fire department in entering the building in case of fire or emergency.

D Signs -- It is the intent of this paragraph to provide proper State identification for the public's information. Signage shall be placed to suit the building configuration and the entrance to the State’s quarters. All signage shall comply with California Building Code (CBC), Section 1117B.5 Signs and Indentification.

1 Interior Signage: All doors within the tenant space shall receive signage with California Braille identification (larger than typical ADA Braille). The Braille shall be grade 2 with 1/10" inch on centers within each cell with 2/10" inch between cells. Dots shall be raised 1/40" inch above background. Letters and numbers on signs shall have a width-to-height ratio of between 3:5 and 1:1 and a stroke width to height ratio between 1:5 and 1:10. Signs shall be mounted 60” A.F.F. and 4”-6” from strike side of doors. Each toilet room shall have required identification signs (on door and on adjacent wall), which contain the international symbol of accessibility in white on a blue background, color number 15090 in Federal Standard 595B.

2 Interior State of California Identification: On or near entrance door, install the words "STATE OF CALIFORNIA" and the name of State agency, and street or suite numbers as directed. Signage shall be per building standard subject to approval by the State. Painted or pressure sensitive vinyl letters are not acceptable, unless they are being applied to glass/glazing. Provide similar agency identification signage in the building directory, where occurs.
3 Provide ‘Maximum Occupancy’ sign(s) on the wall above or near the entry door for all conference, meeting, lunch, auditorium, and gathering rooms.

4 Exterior: (Applicable only if building is totally occupied by the state.) Letters shall be of; cast aluminum alloy, bronze; black anodized finish, dimensional plastic, or as approved by the State. Submit catalog or sample for approval by the State. The words "STATE OF CALIFORNIA" shall be 6" high and the name of the department shall be 10" high. Sign shall include street address numbers 4" high.

5 All building entrances that are accessible to and usable by persons with disabilities shall be identified with at least one standard sign (International accessibility symbol) and with additional directional signs, as required, to be visible to persons along approaching pedestrian ways and path-of-travel to State space.

E Assistive Listening Devices--

Provide an assistive listening device system for all meeting, conference, quiet, assembly and gathering rooms. One portable system per floor can be shared between rooms with occupant loads less than 50. The system shall be designed to accommodate the largest room size that is being shared. The portable, wireless FM based system shall include high output acoustic headset(s) such as the Centrum 8500-25f (or current model) with disposable ear plugs, neckloop(s), conference microphones and a lockable charger/accessory carry case large enough to hold all equipment. The system shall be hearing aid compatible. Rooms with more than 50 person occupant load and fixed seating, must have a fixed assistive listing device system for 4% of the total number of seats in these rooms, but not less than two. Systems shall be designed to meet Federal Access Board sections A4.33.6 and A4.33.7, website: [http://www.access-board.gov/publications/9-als/bulletin-a.htm](http://www.access-board.gov/publications/9-als/bulletin-a.htm) acceptable companies which provide assistive listening device systems are Phonic Ear, Williams Sound, Comtek and Centrum Sound. Provide signage both inside rooms and in common corridor, which shows listening device logo and states that the device is available and where it is located. The Lessor shall provide the system, the State will maintain and repair the system.

F Fire Extinguishers--

Fire extinguishers shall be installed throughout the space per State Fire Code requirements. Extinguishers shall be permanently mounted in recessed or semi-recessed cabinets. Cabinets mounted in fire rated construction shall be rated equal to or greater than the wall into which they are placed. Above each fire extinguisher, high on the wall, shall be placed a red triangular shaped 3-D sign which has printed on it 'Fire Extinguisher' with an arrow pointing down.

G Flagpoles--

State law requires the State and American flags to be displayed at all state buildings when the State (all agencies combined) occupies more than 50% of the available building space, or is the sole tenant. Lessor shall provide a flagpole and California and United States flag(s). Submit proposal for type and size to Planner.
The flags must be flown outside the building and must be prominently placed although freestanding flagpole is not necessarily required. Flying any other flags outside or on State occupied buildings will require the approval of the Director of DGS. Flagpole shall be tapered aluminum with external halyard system and snap connections for two flags. Pole shall be 30’ above grade if freestanding, or 14’ minimum above parapet if attached to building. At freestanding flagpoles, install cleat centered at approximately 48” above ground. Provide Title 24/ADA accessible path to pole. Provide lockable halyard box of length to enclose cleat and protect halyards to 10’ above ground. For 24-hour display of flags, provide night time illumination. Said illumination system shall be sensor controlled and highly energy efficient.

H Accessible Public Telephones—

Wall mounted telephones shall be provided one-per-floor. All telephones required to be accessible shall be equipped with a volume control. Check code requirements for banks of four or more interior or exterior telephones. Pay telephones must be adaptable to accept portable text telephone (TTD) for the hearing impaired; an electrical outlet within 4 feet of the telephone is required. Provide international signs for accessible telephone. For volume control, provide button with Braille. Provide clear space of 30” wide x 48” deep in front of telephone. Place center of coin deposit slot at 45” and allow 27” clear underneath the telephone.

I Modular Systems Furniture Projects--

1 Modular Systems Furniture (MSF) -- The State may elect to provide and install MSF in lieu of traditional office furniture. MSF may be comprised of any combination of freestanding partition panels, panel supported work tops, files, components, integrated circuitry, and access raceways for provision of electrical power, voice and data cabling.

2 If the state elects to use MSF as described above, it will be the lessor’s responsibility to include the following materials and/or services in the construction of lease required “Tenant Improvements” (TI’s).
   a Lessor shall obtain any required permits from the local jurisdiction for installation and ‘hardwiring’ of MSF workstations. State or its MSF vendor will provide MSF layout drawings unless otherwise agreed.
   b Lessor shall ensure that building electrical/mechanical systems and capacities are compatible with MSF design layout. Lessor shall ensure MSF lay out drawings are used to determine possible conflicts between location of wall mounted equipment such as access panels, thermostats, fire extinguishers, etc. Relocate existing equipment as required to accommodate MSF layout.
   c If Lessor’s architect has been contracted to provide MSF layouts: Main aisles shall be a minimum of 44 inches clear. Side aisles can be a minimum of 36” in width; 44” clear is preferred. Entrances to individual workstations shall be a minimum of 36”. All designs must be reviewed and approved by Planner.
   d Lessor shall be responsible for coordination and delivery of electrical between the MSF and building electrical supply at POC, (POC - generally a junction box at wall or above ceiling) as indicated on MSF...
installation and wiring cable plans to be provided by the State. If not otherwise noted, provide electrical accommodations for a minimum of 3 duplex receptacles per workstation: one dedicated for computers and two miscellaneous circuits. One 20 amp circuit not to serve more than 4 workstations. Lessor shall also be responsible for final ‘hardwire’ connections at POC as required after placement of system furniture by vendor. Where MSF power/communication poles are utilized, Lessor shall furnish and install seismic bracing for said poles, as required by the local building official.

e Unless otherwise agreed to by State, the Lessor shall be responsible for coordination and installation of voice/data communication cabling system complete from building main point of entry (MPOE) through intervening equipment room(s), as required to meet maximum cabling run requirements to final point of termination(s) at MSF. Cabling shall be minimum Category 5, unless stated otherwise in these Exhibit ‘B’ Specifications.

f Unless otherwise agreed, the lessor shall provide staging area(s) sufficient to accommodate all MSF components required for a complete installation. All pathways and staging areas shall be kept clear of construction debris and other trade(s) and equipment.

g Lessor shall provide access to building and facilities to the State and its MSF installer, as required during MSF installation period.

3 Installation -- An installation project for MSF takes place in four phases: design, procurement; scheduling; and set-up.

a Unless otherwise agreed, the State or its representative shall provide MSF layout drawing(s) to lessor for use in the preparation of construction documents.

b Unless otherwise agreed, the State shall complete all procurement procedures for purchase of MSF.

c Coordination of delivery and installation of systems furniture is critical to timely occupancy by the tenant agency, as business can not be conducted until power, voice and data components are fully operational. Lessor shall agree to target completion date(s) for TI project and or TI project phases. Modular systems furniture installer shall provide installation schedule to lessor and agree to target completion date(s) for MSF installation project and or phases.

d Installation of modular systems furniture may not take place until construction of tenant improvements is substantially complete. Conditions required for said completion are as follows:

- Building official approval of electrical and cabling systems to the point of connection shall be approved during permit process and shall be inspected at the MSF installation completion.
- Installation of floor covering.
- Substantial completion of project punchlist.
e If lessor fails to meet the target project completion date for TI's, the interval of delay will be added to the target systems installation date. Lessor shall be responsible for storage and associated delivery costs of systems product if delivery schedules can not be adjusted to conform to new schedules.

f If MSF installer fails to meet the target systems installation date, rent will commence on the originally targeted date.

g If state (RESD or tenant agency) causes delay to lessor or MSF installer, rent will commence in accordance with the original schedule.
MODULAR SYSTEM FURNITURE SELECTION

☐ ☐ MODULAR SYSTEM FURNITURE IS BEING USED ON THIS PROJECT
YES NO

TYPE OF MODULAR SYSTEM FURNITURE BEING USED

☐ ☐ ☐ PIA (PRISON INDUSTRY AUTHORITY)
☐ ☐ ☐ ALLSTEEL
☐ ☐ ☐ HAWORTH

SEE FOLLOWING MODULAR SYSTEM FURNITURE WIRING DIAGRAMS WHICH CORRESPONDS WITH THE SELECTED MANUFACTURER LISTED ABOVE.
NOTE: LESSOR/GENERAL CONTRACTOR shall provide electrical connections and seismic bracing by licensed electrician.
PIA SYSTEM FURNITURE – WIRING DIAGRAMS

NOTE: LESSOR/GENERAL CONTRACTOR shall provide electrical connections and seismic bracing by licensed electrician.

CIRCUIT USE
RED LINE I
BLACK LINE II
BLUE  LINE III
ORANGE LINE III
WHITE COMMON NEUTRAL
WHITE/GREY CLEAN NEUTRAL
GREEN COMMON GROUND
GREEN/YELLOW ISOLATED GROUND

***4 CIRCUITS AVAILABLE
***13 RECEPTACLES PER CKT
***DO NOT EXCEED 16 AMPS PER CKT.
***CKTS I AND II ARE UTILITY CKTS.
***CKT III IS FOR PRINTERS, FAX, ETC.
***CKT III IS FOR COMPUTER USE

20 AMP RECEPTACLE REQUIRES SEPARATE HOME RUN
NOTE: LESSOR/GENERAL CONTRACTOR shall provide electrical connections and seismic bracing by licensed electrician.

Trac-Pac 8

TRAC-PAC

HARMONICS PROTECTION

Two Plus Two In Only Two Devices

Trac-Pac has a patented feature embodied in two duplex devices:

Only two circuits share each neutral. The worst case load is 28 amperes in a #12 neutral. These two devices greatly simplify ordering, specification, stocking, use, and understanding. Four circuits make choosing confusing. These two devices make the choice simple – computer or utility?

Two split duplexes give each user access to four circuits. Occasional breaker overloads call for simply replugging offending equipment. Rewiring, new access, new duplexes, or reconfigure of power can commonly be avoided.

DUPLEX WIRING TYPICAL OF 2+2 PLANNING
The Three-circuit, separate neutrals configuration is a wiring option that provides separate neutrals for each of the three circuits. Two circuits share a common ground, and one circuit is isolated/dedicated. The three circuit components have model numbers with an "A" suffix and appear in a gray box in this plan.

**Notes:**
- Four-circuit components and three-circuit components (with suffix "A") cannot be used together.
- Components of the two systems are keyed differently to prevent components of one system being connected to components of another system.
- Allsteel Model Numbers are printed on the UL labels, and components are color-coded to provide visual identification of the different components.
- Four-circuit components have black plastic parts.
- Three-circuit components have rust-colored terminal ends and receptacle backs are rust colored.

### Typical power usage by the most commonly specified office equipment.

*Source: Industry Analysis, Inc., Rochester, NY*

<table>
<thead>
<tr>
<th>EQUIPMENT</th>
<th>AMPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computers</td>
<td></td>
</tr>
<tr>
<td>Personal Computer</td>
<td>3</td>
</tr>
<tr>
<td>Notebook Computer</td>
<td>3</td>
</tr>
<tr>
<td>Monitors</td>
<td></td>
</tr>
<tr>
<td>13&quot; Color Monitor</td>
<td>2</td>
</tr>
<tr>
<td>17&quot; Color Monitor</td>
<td>3</td>
</tr>
<tr>
<td>21&quot; Color Monitor</td>
<td>4</td>
</tr>
<tr>
<td>Printers</td>
<td></td>
</tr>
<tr>
<td>Dot Matrix</td>
<td>less than 1</td>
</tr>
<tr>
<td>InkJet</td>
<td>less than 1</td>
</tr>
<tr>
<td>Personal Laser or LED</td>
<td>8</td>
</tr>
<tr>
<td>Workgroup Laser or LED</td>
<td>15</td>
</tr>
<tr>
<td>Copiers</td>
<td></td>
</tr>
<tr>
<td>Desktop Copier</td>
<td>15</td>
</tr>
<tr>
<td>Console Copier</td>
<td>20</td>
</tr>
<tr>
<td>Copier/Duplicator</td>
<td>30</td>
</tr>
<tr>
<td>Fax Machines</td>
<td></td>
</tr>
<tr>
<td>InkJet Fax</td>
<td>less than 1</td>
</tr>
<tr>
<td>Thermal Fax</td>
<td>less than 1</td>
</tr>
<tr>
<td>Plain paper Fax</td>
<td>8</td>
</tr>
<tr>
<td>Task Lights</td>
<td></td>
</tr>
<tr>
<td>36&quot; T8 Fluorescent</td>
<td>0.2 bulb</td>
</tr>
<tr>
<td>48&quot; T8 Fluorescent</td>
<td>0.5 bulb</td>
</tr>
</tbody>
</table>

### Duplex Receptacles

- 15 AMP Receptacle
- 20 AMP Receptacle (Required by some large copiers)
RESID PLANNER:  
CHECK OFF WHICH CONFIGURATION IS BEING USED ON THIS PROJECT

Four-circuit, 3 + 1 Receptacle Option

The 3 + 1 option is the electrical standard used on Consensus for many years in most installations. This wiring option provides three utility circuits plus an isolated/dedicated circuit for more sensitive equipment. Circuit 2 (one of the 3 common circuits sharing a neutral wire) cannot be used with single-phase building electrical supply.

Four-circuit, 2 + 2 Receptacle Option

The 2 + 2 option is a wiring option that provides two utility circuits and two isolated circuits for more extensive computer usage applications.
NOTE: LESSOR/GENERAL CONTRACTOR shall install & connect all above ceiling junction boxes for modular furniture, including installation of seismic bracing for furnished junction boxes.
02.10 PLUMBING

A Plumbing fixtures shall be as indicated on plans with number and type of fixtures shown. If not shown on plans, provide plumbing fixtures in number and type required by the CPC (California Plumbing Code). There shall be an accessible restroom facilities (1 man/1woman) within 200 feet of an accessible restroom entrance. When the state is leasing space on multiple floors, the lessor shall provide accessible restrooms on each floor occupied by the state.

B All new water closets and urinals must be wall mounted.

C All fixtures and accessories must be as energy and resource efficient as possible. The following is general criteria and should be used as appropriate:

- Limit flow rates to 0.5 gpm for lavatory and multipurpose faucets and 2.5 gpm for kitchen faucets (at 80 pound per square inch, or psi) provide spray nozzle.
- Limit flow rates to 1.5 gpm for showerheads (at 80 psi).
- Limit maximum flush volume to 1.6 gallons for toilets and 1 gallon for urinals.

D Provide hot and cold water at each lavatory and sink, per CPC and CCR Title 24, Part 5. All new domestic hot water systems shall be located not more than 35 feet from furthest point of use and shall have an energy factor of at least 0.95, and shall be equipped with an external or internal heat trap on all inlets and outlets. All water heaters shall initially be set at 110°F.

E In addition to the hot, cold and waste water systems required by code, the lessor shall provide floor drains in restrooms, locker rooms with showers, shower rooms, etc., or as requested by Planner.

F Provide one or more ADA compliant refrigerated drinking fountain(s) within close proximity to office quarters or as indicated on plans. In existing conditions where single accessible water fountains are located; they shall be completely within alcoves not less than 32 inches in width and 18 inches in depth. The bubbler height shall be 36”. Provide 27” clear under the fountain to the floor. The water shall pour parallel to the front of the fountain. In new construction, where only one drinking fountain area is provided on a floor, there shall be a drinking fountain that is accessible to individuals who use wheelchairs and one accessible to those who have difficulty bending or stooping. This can be accommodated by the use of hi-low fountains, or by other means as would achieve the required accessibility for each group on each floor. The bi-level fountain shall be located completely within an alcove 48” wide x 18” deep. The bubbler height shall be 42” for the higher fountain, and shall be 36” for the lower. Provide 27” clear under the fountain to the floor. All drinking fountain drains shall be centered 18” from the side alcove wall.
G  Soldered connections on water supply lines shall use ASTM B32, Grade 5A 95-5 Tin Antimony solder. Lead solder is not allowed.

H  At fixtures provided for the state's exclusive use, provide the following:

1  Hot water to lavatories, and sinks  water temperature shall not exceed 105°F. Flow restrictors or orifices shall be installed in all hot and cold water lavatory faucets to restrict water flow to maximum of 1-1/2 gpm.

2  If garbage disposals are shown on Exhibit ‘A’, they must be placed in sink(s) in one of the following configurations:
   •  In a 30" deep counter with rear draining sink OR
   •  In a double wide sink; the counter can be 24" deep with a 36" wide cabinet opening below.
   •  In either situation all clearances shown in diagram, which follows, must be maintained.

I  Accessible sink shall not exceed 7 inches in depth. Accessible sink counters shall be equipped with faucet controls: push, lever or electronically operated. Faucet controls: lever handles, push type with 5 pounds maximum activated force, or electronically operated type.
J Operating water heaters and storage tanks shall be fitted with external insulation blankets rated at a minimum thermal resistance value of R-6 unless the existing insulation jacket is in excess of R-12.

02.11 HEATING, VENTILATING, AND COOLING

A Comfort conditioning system shall consist of a fully automatic heating, cooling, and ventilating system providing air continuously during occupied hours to areas designed for occupancy; including, but not limited to, storage-work rooms, lounge, employees' room, internal corridors, telephone equipment room and where noted on plan.

- In existing or new space, the Lessor shall operate HVAC system to provide continuous air changes for a minimum of 24 hours per day, for a minimum 7 days prior to occupancy.

B Systems shall be zoned for each exposure and for interior zones, each zone of size and shape to ensure even distribution and temperature control throughout occupied space.

C The heating and cooling system shall be designed and capable of maintaining the following temperatures in all occupied areas:

<table>
<thead>
<tr>
<th>Design Criteria</th>
<th>Operating Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winter: 76°F</td>
<td>Winter: 68°F</td>
</tr>
<tr>
<td>Summer: 72°F</td>
<td>Summer: 78°F</td>
</tr>
</tbody>
</table>

D The complete hydronic and air system shall be checked, adjusted, and balanced following the installation of MSF and re-balanced two weeks after occupancy by an established air-balancing firm in accordance with the AABC Standards. A certified air balance report shall be provided to the Planner within two weeks after occupancy.

E Non-mechanical heating and cooling, such as indirect evaporative cooling, desiccant dehumidification, and passive solar design measures are preferred provided the above temperatures can be maintained.

F Detailed heating and cooling calculations, and Title 24 compliance information shall be submitted to the State upon request, and shall include equipment selection data. "As-built" drawings shall be submitted upon project completion. The cooling load for conference rooms, hearing rooms, public lobbies, waiting rooms, and employee rooms shall be based on occupancy of 20 S.F. per person. Cooling load for all other areas shall be based on an occupancy of 100 s.f. per person.

G Distribution ductwork shall be properly insulated in accordance with the California Mechanical Code (CMC). Ductwork shall be concealed or aesthetically compatible with the architectural design of the interior space. Air distribution system shall be equipped with air volume controls and shall be capable of draftless operation at an acceptable noise level while handling the design flow of air. The ‘acceptable noise level’ shall comply with 1999 HVAC Applications ASHRAE Handbook, Section 46.25, Table 34 and Guideline Criteria for HVAC – Related Background Sound in Rooms. Return air shall be conducted through registers connected to ductwork or
plenum above ceilings, except as otherwise approved by the State. The ductwork construction and installation shall conform to the appropriate Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) low velocity or high velocity duct construction standards.

1 All ductwork, plenums, and fitting joints from all heating and cooling equipment in unconditioned or unoccupied space shall be insulated in accordance with CCR Title 24, Part 1 through Part 6.

In new construction, defined as work being done in shell buildings, reconfiguration of open space to private offices, rezoning and realignment over 20% of the entire space, all ducting shall be sheet metal.

1 Flexible ductwork may be used only at air outlets and at maximum length of 7 feet.

H Individual supply and return air outlets shall be provided in each enclosed area. Undercutting of doors, door grilles, or jumper ducts are not acceptable.

I All steam, steam condensate return piping, and recirculating hot water piping in unheated areas shall be insulated in accordance with CCR Title 24, Part 1 through Part 6.

J All fan systems shall be equipped with an economizer system that will use outdoor air up to 100% of fan capacity for cooling of the building. Operation of the economizer cycle shall be controlled by outside dry bulb air temperature. Outdoor air dampers are to be specified for low air leakage and adjusted for tight closure.

K Minimum outside air ventilation shall be 20 cfm per person.

L A design supply airflow of .75 cfm per s.f. in interior or windowless perimeter spaces is acceptable.

M Toilet rooms shall be provided with a mechanical exhaust system providing a minimum of 15 air changes per hour. Replacement air shall be supplied directly or indirectly from the building system. Individual supply ducts or sound-lined jumper ducts are acceptable. Where toilet rooms have individual exhaust fans, the fan operation shall be interlocked with the associated HVAC unit supply fan. Exhaust air shall be ducted to the outside.

N Lunch rooms and break rooms where microwave oven, cook tops or other food heating elements are being used shall be provided with an exhaust fan in the room, ducted directly to the outside.

1 This requirement can be accomplished in one of the following three ways in order of preference: exhaust hood, exhaust into open-air plenum using a HEPA quality filtration system, or a room air re-circulating hood.

O Thermostats shall be provided for the regulation of the ‘daytime’ temperature in each zone without manual attention by tenant. The thermostats shall include automatic change over from heating to cooling. ‘Dead Band’ thermostats shall be used with adjustable range where no heating or cooling is activated. The temperature range of the thermostats shall be minimum 55°F to 85°F (13°C to 28°C). Lockable tamperproof covers shall be provided. Thermostats shall be cleaned, calibrated, and adjusted to 68°F maximum for heating and 78°F minimum for cooling. Room thermostats shall be located in representative location (out of
the sun, out of diffuser blow, and not on exterior walls or near return air devices). If no other alternative exists, thermostat may be placed on an exterior wall, only with insulation bases and only after approval by the Planner. Coordinate location of wall thermostats with Planner to avoid placing them behind millwork, modular system furniture or other specialties and equipment.

P Where the heating design temperature is below 35°F, provide one winter night setback thermostat for each (or all) air handling unit(s). The thermostat shall cycle the heating system to maintain 55°F.

Q One or more readily accessible, adjustable, automatic-control time clocks (7-day), battery or spring loaded, or energy management start/stop systems (micro processors) shall be provided to allow the shutoff and startup of the heating, ventilating, and cooling equipment for off-hour energy control. Locate control unit in mechanical room or as directed by the State. State shall determine maximum daily hours of operation. Provide one-hour bypass timers where after-hours operation as noted on plans or as directed by the Planner.

R New refrigeration equipment or heat pumps may be air cooled or water cooled with a minimum COP or EER ratings specified in CCR Title 24, Part 1 through Part 6.

S Filtration shall be provided for all ventilated (outside air) and recirculated air. Low static pressure filters shall be used, with 0.15” maximum pressure drop when clean, except in areas requiring a cleaner atmosphere.

T Install electric ignition pilots for all gas-fired boilers and furnaces.

U When doing work such as painting, wallcovering or other work, ensure that materials used do not emit toxic fumes.

Before performing work which causes non-toxic fumes, notify tenant and building lessor, shut off registers and radiators to vestibules, lobbies, hallways, adjacent tenant spaces and stairwells. For double duct systems, shut off cooling during heating months and heating during cooling months. Minimum ventilation requirements must be maintained. Raise cold air supply temperature, lower hot air supply temperature, lower boiler water temperature, lower condenser water temperature, and raise chilled water temperature to compensate for reduced heating and cooling load while maintaining the room temperatures in accordance with Section 02.11 C.

V All equipment shall be inspected for proper operation at least every month. An inspection and maintenance log for time clocks and all major equipment, including the economizer, shall be posted in the mechanical room or in a convenient building location and be available upon request for state inspection. Lessor shall keep inspection and maintenance records in the format described in Title 8, General Industry Safety Orders, Section 5142.

W Refer to Division 1, Section 01.02, Paragraph B, for energy conservation criteria.

X Computer Rooms: Check Exhibit ‘A’ or ‘Special Provisions’ at the end of these Specifications for additional data, regarding electrical and 24 hours HVAC use.

Y All hallways, corridors and walkways shall be air conditioned and heated unless otherwise noted by Exhibit A drawing or by Planner.
Z In multi-tenant buildings, HVAC zones, and thermostats shall not be shared with another tenant. All pertinent conditioning equipment and components shall be adjusted, modified or replaced for this project space.

AA Duct Cleaning shall be performed prior to occupancy and every two years thereafter. Any duct cleaning should be scheduled during periods when the building is unoccupied to prevent exposure to chemicals and loosened particles. The air handling unit should not be used during the cleaning or as an air movement device for the cleaning process. The system should be run to allow at least 8 air changes in the occupied space when duct cleaning has been completed, per The National Air Duct Cleaning Association requirements. Use vacuum equipment or fans during cleaning and sanitizing to make sure that cleaning vapors are exhausted to the outside and do not enter the occupied space. When the vacuum collection unit is inside the occupied space, only HEPA filtered (high efficiency particle arrestor) vacuuming equipment shall be used.

02.12 ELECTRICAL

A Design Guidelines— Follow recommended design guidelines in the IESNA Lighting Handbook, Ninth edition, including the following:

- Office Area Visual Comfort Probability (VCP) of 70 or better for any ceiling mounted direct luminaries.
- If the primary task in a large office space is reading a VDT screen, the maximum allowable ceiling luminance should not exceed 850 cd/m2.

B California Code of Regulations (CCR), Title 24, Part 6, California Energy Code, has been revised effective June 1, 2001. The change was implemented by AB 970, Energy Efficiency Standards for Residential and Non-Residential Buildings. It is the lessor’s responsibility to comply with applicable codes, ordinances, and regulations inclusive of this change to Title 24, Part 6, and effective June 1, 2001.

C Unless noted otherwise on Exhibit ‘A’ plan: Recessed fluorescent fixtures shall be three (3) lamp, twenty-four (24) cell or four (4) lamp, thirty two (32) cell parabolic diffuser type fixtures suitable for split switching. Split switching of the 2’ x 4’ fluorescent lighting fixtures shall be standard where utilized in conference rooms and special use areas. Conference rooms and other special rooms shall include recessed can-type dimmable incandescent fixtures utilizing tungsten halogen lamps. A mixture of 2’x4’ and can-type fixtures may be used.

D In general, lighting schemes should avoid high contrast, scalloped patterns, or other visually distracting results. Lighting control technologies shall be installed to effectively combine the use of daylight and fluorescent lighting with daylight sensors and dimmable fluorescent ballasts in open office areas and lobbies. Provide motion sensors and/or bypass timer controls for rooms and areas within the space to reduce energy consumption by switching off fixtures in unoccupied areas.

E Ambient lighting shall consume no more than 0.9 watts/square foot with a measured minimum ambient lighting level (see schedule on following page). T-8 or T-5 fluorescent lamps shall be provided with a color rendering index (CRI) of 85 and a color temperature of 3500° K, similar to Osram Sylvania Inc., Phillips Lighting, GE or approved equal. Lamp color temperature shall match in each area.
F All 125 volt, single-phase, 15 and 20 ampere receptacles installed to serve countertop surfaces and which are located within 6 feet of the outside edge of the sink shall have a ground fault circuit interrupter protection for personnel.

G At all suspended light fixtures, the lens (every type) shall be firmly anchored to the fixture to prevent it from being dislodged. The lens shall remain easily accessible for maintenance.

H Office areas shall have sufficient lighting fixtures properly spaced and capable of providing the recommended lighting average-to-minimum levels of illumination levels, indicated in the following table:
Lighting Levels for Office Space

(Levels shown are average maintained horizontal foot candles, measured 30" above finished floor).

**Minimum Lighting Levels**

<table>
<thead>
<tr>
<th>Area</th>
<th>Foot Candles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Surfaces (includes task lighting)</td>
<td>50</td>
</tr>
<tr>
<td>Work Area Ambient Lighting</td>
<td>30</td>
</tr>
<tr>
<td>Telecommunications rooms and closets</td>
<td>50*</td>
</tr>
<tr>
<td>Special Purpose Area(s)</td>
<td>75*</td>
</tr>
<tr>
<td>Garage Area(s)</td>
<td>50*</td>
</tr>
<tr>
<td>Hallways, Aisles, Corridors</td>
<td>25</td>
</tr>
<tr>
<td>Conference / Meeting Rooms</td>
<td>30 - 70</td>
</tr>
<tr>
<td>Incandescent Lighting</td>
<td>10 - 30</td>
</tr>
<tr>
<td>Drafting Areas</td>
<td>50</td>
</tr>
<tr>
<td>High Density Filing Areas</td>
<td>50</td>
</tr>
<tr>
<td>Document Processing Area/Room</td>
<td>30</td>
</tr>
<tr>
<td>Circulation Space around work areas</td>
<td>30</td>
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<tr>
<td>Building Entries</td>
<td>5</td>
</tr>
<tr>
<td>Restrooms</td>
<td>40</td>
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<tr>
<td>Waiting and Lounge Areas</td>
<td>15</td>
</tr>
<tr>
<td>Coffee Counters</td>
<td>20</td>
</tr>
<tr>
<td>Lunch Rooms/ Break Rooms</td>
<td>30</td>
</tr>
<tr>
<td>24/7/365 Rooms – Emergency Light</td>
<td>1</td>
</tr>
<tr>
<td>Warehouse</td>
<td>2</td>
</tr>
<tr>
<td>Parking Lots/Areas</td>
<td>See ‘T’ of this section***</td>
</tr>
<tr>
<td>Exit Lighting –LED type fixtures consuming not more than 2 watts per fixture</td>
<td></td>
</tr>
</tbody>
</table>

* To be controlled by occupancy sensor
** Using dimmable fluorescent ballasts or split switching
*** To be controlled by a programmable timer with an integrated photocell control device

(1) In open plan offices it may be appropriate to provide task-level (i.e. circulation area levels throughout the space.) Pre-approved furniture-mounted task fixtures may be used to achieve appropriate illumination levels.

(2) Light (foot-candle) level and type (metal halide, fluorescent, etc.) should be engineered relative to equipment and task requirements for specific area.

I The total lighting system design load for office space shall not exceed energy budget as per Title 24, Part 1 and Part 6. Proper lighting at task locations is important. Average footcandle levels shall not be exceeded.

J Requirements for new or replacement linear fluorescent lighting systems
- Minimum Color Rendering Index (CRI) of 75%
- Option of common Color Temperature lamps (CCT) (3000° K through 4100°K)
- Minimum power factor of 90%
- Minimum system efficacy of 90 lumens per watt
- High frequency electronic ballast
- Maximum Total Harmonic Distortion (THD) of 20%
- Minimum lamp life of 20,000 hours
K Requirements for compact fluorescent lighting systems
- Minimum Color Rendering Index (CRI) of 75
- Option of common Color Temperature lamps (CCT) (2700°K through 4100°K)
- Minimum power factor of 90%
- Minimum system efficacy of 60 lumens per watt
- Electronic ballast
- Maximum Total Harmonic Distortion (THD) of 20%
- Minimum lamp life of 10,000 hours

L Pairs of one-lamp or three-lamp recessed fluorescent luminaires and continuous mounted fluorescents that are (1) on the same switch control, (2) in the same area, (3) within 10 feet of each other in accessible ceiling spaces; and (4) do not use electronic ballasts, shall be tandem wired and shall not use single lamp ballasts.

M Light fixtures shall be installed with a 6’ flexible ‘pigtail’ to facilitate rearrangement.

N Replace incandescent lamps with linear fluorescent, compact fluorescent or with circular fluorescent lamps wherever possible.

O In building designed for a return air plenum, light fixtures shall be of the return air type.

P Lights shall be controlled by wall switches in general. All light switches shall be installed within the space controlled by them or near entrances and exits to areas served. Three-way switches shall be provided in corridors and spaces with more than one entrance.

Q Emergency lighting shall be placed at all exits, stairwells, exit pathways, 24/7/365 HVAC rooms in intervening rooms connecting adjacent spaces and restrooms. Exit Lights shall be Light emitting diode (LED) type.

R Lighting panel switches, if required, shall have a 7-day spring loaded or battery loaded time clock set for a maximum of 10-1/2 hours of operation daily. Time clock operation shall have manual override with one hour reset. Override shall be accessible to tenant.

S Install dual switching to provide even half level lighting in enclosed areas (100 s.f. or larger in which the connected lighting load exceeds 1.2 watts per square foot for the space as a whole) in accordance with Title 24, Part 6, Sec. 131(b).

T Lighting for parking areas shall be high-pressure sodium or metal halide in full cutoff luminaries. Average light levels shall correspond to zones as referred to in IESNA RP33-99.

U Where exterior illumination is required, use high intensity discharge (HID) lamps in full cutoff luminaires for accent light and outdoor building security lighting where possible. All building entrances shall be lighted.

V Decorative lighting shall be kept to a minimum or eliminated.

W Any parking and outdoor lights (nonsecurity) shall have photocell control or a 7-day spring or battery loaded time clock set to suit State’s after hours needs.
X Duplex convenience outlets shall be 20 ampere 125 volt 3 wire grounding type, provided in the number indicated and located as shown or directed with at least one in each office.

Y Provide wiring and electrical switching and control equipment for heating, ventilating, and cooling equipment and other special power or heating equipment.

Z Provide special outlets, dedicated circuits, isolated ground convenience outlets, etc., for copy machines, word processing equipment, data processing equipment, etc., where shown on plan. Dedicated circuits shall have individual black wire from outlet to panel breaker and individual white (neutral) wire from outlet to panel neutral bus. Green wire shall be run to building ground via an isolated ground panel bus. (Green wire may be ganged from outlets to isolated ground panel bus.) Lessor shall furnish certification from electrical contractor that this work has been installed in compliance with Specifications and vendor's equipment requirements.

AA Service and metering facilities shall be in accordance with power company requirements. Short circuit calculations shall be performed based on the available fault current from the utility system and contribution from the facilities motors. Furnish and install main switchboard, panelboards, and feeders as required.

BB Lessor shall provide and install all conduit, complete with pull wire, necessary for telephone installation including conduit from exterior of building to junction box location and telephone distribution centers. Provide telephone terminal backboard or terminal cabinet of proper size, as directed by telephone company. Provide flush cabinets or closets to enclose all telephone backboards, terminal strips, and telephone equipment except where suitable telephone company furnished covers will serve to conceal these items. Provide lighting and power outlet(s) in closets as required by telephone company. Telephone service outlets shall be as shown and conduit provided to serve these locations.

CC Provide 20 percent additional electrical capacity to state leased space.

DD Refer to Division 1, Section 01.02, Paragraph C, for energy conservation criteria.

EE The electrical breaker panels servicing the State’s leased area shall be accessible from the building core or from within the State’s quarters.

FF Code required fire alarm, smoke systems, and fire suppression systems shall be provided at the Lessor’s cost. Voice, data and security systems shall be provided as agreed upon in the lease.

GG All appliances and all energy consuming products shall be Energy Star certified as deemed appropriate by the EPA current evaluations at time of permitting for this project. The Energy Star® labeling program is a partnership between the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy (DOE). All products displaying the Energy Star® label meet Federal Energy Management Program (FEMP) standards. For energy consuming products where there are no FEMP recommended standards, or Energy Star® product available, the Lessor’s contractor shall purchase products that conserve electrical power and/or natural gas to the maximum extent possible, within budgetary constraints. Currently, the FEMP has recommendations for the following product categories:

1 Lighting Technologies: Fluorescent tube lamps, fluorescent ballasts, HID luminaries, downlight luminaries, fluorescent luminaries, compact fluorescent lamps and exit signs.
2 Commercial/Industrial Equipment and Appliances: Air or water-cooled electric chillers, air conditioners, heat pumps, dishwashers, refrigerators, electric water heaters, gas water heaters, air source heat pumps, boilers, ice cube machines, motors, distribution transformers, and centrifugal pumping systems.

HH For MSF requirements, see section 02.09 I of these specifications.

II For electrical/data/telephone outlet heights: existing receptacles may remain at 12” AFF, while new outlets shall be placed at minimum 15”, with a preferred height of 18” AFF. Outlets above 24” deep counters shall be mounted at 46” AFF.

02.13 ELEVATORS

A Elevator lobbies shall have at least one means of egress. The use of exit or exit-access doors shall not require keys, tools, or special knowledge or effort.

B The car interior shall allow for the turning of a wheelchair. The minimum clear distance between walls or between wall and door, excluding return panels shall not be less than 80” by 54” for center-opening doors, and 68” by 54” for side-slide opening doors. The emergency stop shall be mounted no lower than 2'-11" from floor. The emergency telephone shall be placed no higher than 4 feet above the floor, and the handset cord shall be a minimum of 2'-5" in length. Door opening time to be calculated per Title 24 - Chapter 30.

Note: the automatic door re-opening device is activated if an object passes through either line A or line B. Line A and Line B represent the vertical location of the door re-opening device not requiring contact.
C Buttons for hall call and floor selections shall be fully illuminated, ¾” in size, square shouldered and shall be raised 1/8” above the surrounding surface. All elevator components must be marked by a California Braille symbol immediately below the number, character, symbol or accessory (phone, etc.). The letters shall be raised white, not aluminum.

D ‘Smoke Guard’, ‘Wondoor’ or other protective devices as approved by the State Fire Marshal shall be added to all elevators per floor of occupancy when required by the State Fire Marshal.

02.14 STAIRS

A Stairways shall contain the following components, see Section 1133B.4 for further design criteria.

1 Handrails shall be 34” to 38” above the nosing of the treads

2 Handrails shall extend a minimum of 12 inches beyond the top nosing and 12 inches, plus the tread width, beyond the bottom nosing.

3 Handrails projecting from the wall shall have a space of 1-½ inches between the wall and the handrail and not protrude more than 3” into required width.

4 The handgrip portion of handrails shall be not be less than 1 ¼ inch or more than 1½ inches in nominal dimension. The handgrip portion of handrails shall have a smooth surface with no sharp corners and edges shall have a minimum radius of 1/8 inch.

5 Striping for the visually impaired. For interior stairs, the upper approach and the lowest tread of each stairway shall be marked by a strip of clearly contrasting color at least 2 inches wide and not more that 1 inch from the edge, (All treads at exterior stairs).

6 Open risers are not acceptable.

7 Guardrails must be spaced such that a 4” sphere can not pass through, and shall be 42” high.
02.15 RAMPS

A  Landings at ramps shall be 60" x 60" at top and intermediate and 72 in length and 60" wide at turning and bottom landings.

B  Ramps shall be calculated at 12" horizontal for every 1" of vertical rise = 1:12

02.16 PARKING AND PAVING

A  Parking areas shall have pre-cast concrete bumpers to protect property and pedestrians and shall be paved, including paved access from street and be properly graded for effective disposal of surface water away from building, and off site. Each stall shall have unobstructed individual access. Mark parking stalls with painted 4" wide stripes of white traffic paint or indicate by marker buttons. Provide direction arrows, "IN" and "OUT" indications, etc., and appropriate designation of space for state and Title 24/ADA requirements.

B  Parking areas shall be free of holes, patches, divots or other unlevel, uneven, unsightly conditions. If new material is used, the existing asphalt shall be ground for fill.

C  All new striping or labeling of parking spaces and designations shall be performed using lead-free parking lot paint.

D  Path of Travel: Shall consist of an unobstructed, continuous pedestrian pathway (the route shall coincide with the route used by the general public) from the parking lot and the public way connecting the office quarter’s with the exterior approaches, entrances, exits, restrooms, telephones, and drinking fountains serving those office quarters including vertical accessibility where applicable.

E  The requirements for the people with disabilities parking spaces will be as follows: Provide parking ratio for accessible parking stalls to total spaces. Please see the table below for spaces required. Calculate each parking lot or parking structure separately. Provide accessible Van space(s) as required, minimum of one. Each van space shall have it’s own 8 foot unloading space – they can not be shared.

SPACES REQUIRED:
Establishes the number of accessible parking spaces required.

<table>
<thead>
<tr>
<th>TOTAL NUMBER OF PARKING SPACES IN LOT OR GARAGE</th>
<th>MINIMUM REQUIRED NUMBER OF CAR SPACES</th>
<th>MINIMUM NUMBER OF VAN SPACES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-8</td>
<td>0</td>
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<td>1-25</td>
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<thead>
<tr>
<th></th>
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<tr>
<td>51-75</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>76-100</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>101-150</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>151-200</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>201-300</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>301-400</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>401-500</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>501-1000</td>
<td>*</td>
<td>2</td>
</tr>
<tr>
<td>1001 and over</td>
<td>**</td>
<td>2</td>
</tr>
</tbody>
</table>

* Two percent of total
**Twenty plus one for each 100, or fraction thereof over 1,001.

F Arrangement of parking space: In each parking area, a bumper or curb shall be provided and located to prevent encroachment of cars over the required width of walkways. Also, the space shall be so located that persons with disabilities are not compelled to wheel or walk behind parked cars other than their own. Pedestrian ways, which are accessible to persons with disabilities, shall be provided from each such parking space to related facilities, including curb cuts or ramps as needed. Ramps shall not encroach into any parking space; in new construction, curb cuts shall be used.

G Identification of Parking Spaces: Each parking space reserved for persons with disabilities shall be identified by a reflectorized sign permanently posted immediately adjacent to and visible from each stall or space, consisting of a profile view of a wheelchair with occupant in white on dark blue background. The sign shall not be smaller than 70 inches in area and, when in path of travel, shall be posted at a minimum height of 80 inches from the bottom of the sign to the parking space finished grade. Signs may also be centered on the wall at the interior end of the parking space at a minimum height of 36 inches from the parking space finished grade, ground or sidewalk. Van-Accessible spaces shall have an additional sign stating “Van-Accessible” mounted below the symbol of accessibility.

1 All signs which state ‘Handicapped’ or ‘Physically handicapped’ must be removed and replaced with wording which reads “Persons with Disabilities”. This is true for all signage throughout the property.

2 Provide tow-away signs at each entry to each parking lot which shall not be less than 17 inches by 22 inches in size with lettering not less than 1 inch in height, which clearly and conspicuously states the following:

   "Unauthorized vehicles parked in designated accessible spaces not displaying distinguishing placards or license plates issued for persons with disabilities may be towed away at lessor’s expense. Towed vehicles may be reclaimed at…………***……… or by telephoning …………***…………."

*** This information must be a permanent part of the sign and shall not be omitted – use police non-emergency number.
Parking Space Size: Accessible parking spaces shall be located as near as practical to a primary entrance and shall be sized as follows:

1  Dimensions. Where single spaces are provided, they shall be 14 feet wide and outlined to provide a 9 feet wide parking area and a 5 feet loading and unloading access aisle on the passenger side of the vehicle. When more than one space is provided in lieu of providing a 14 feet wide space for each parking space, two spaces can be provided within a 23 foot wide area lined to provide a 9 feet wide parking area on each side of a 5 feet loading and unloading access aisle in the center. The minimum length of each parking space shall be 18 feet.

2  Van space(s). One in every eight accessible spaces, but not less than one, shall be served by an access aisle 96 inches wide minimum and shall be designated van accessible.

Construction drawings shall include a site and/or building plan showing the path of travel denoted by a dashed or dotted line and all slopes in path of travel exceeding 1:20.

02.17 LANDSCAPING

A  All new landscaping shall be of a locally drought tolerant variety.

B  Deciduous trees (5 gallon size) shall be planted on the west, east, and south sides of the building where planting is called for on plans. Solar access rights to adjacent buildings shall be observed.

02.18 PROJECT CLOSE OUT

A  At project completion the Lessor shall provide the Planner copies of the following documents:

- Copy of Building Permit – Prior to occupancy
- Certificate of Occupancy – within 30 days from date of occupancy
  Note: a copy of the final signed off inspection card shall be submitted prior to occupancy.
- Air Balance Report – Prior to occupancy and two weeks after occupancy
- O & M Plan for Toxins as applicable
- WIC Certified Compliance Certificate for millwork and cabinetry- Prior to occupancy
- State Fire Marshal approved transmittal – Prior to occupancy
- DSA approved/ reviewed form - Prior to occupancy
- O & M Plan and training for floor maintenance, building systems (HVAC, security, and the like) appliances, etc., as applicable
- Sustainable lumber certification
- Emergency evacuation plans (8 ½” x 11) framed under glass.
- Concrete moisture test
- Copies of all approved hardship or MOU agreements
- Pre and post Construction Waste Management checklist
02.19 SUBSTANTIAL COMPLETION

A The building shell and core and leasehold improvements shall be considered substantially complete when constructed in accordance with Exhibits ‘A’, ‘B’ and ‘C’ which define a level of completion that will allow the State tenant program to operate without material interference.

B Access to premises: State, its employees, agents, and invitees, have ready access to the building and premises through the main lobby of the building and elevators upon substantial completion.

C Mechanical/Utility/Finish Installations: The following items are installed, in good operating order, and accessible or useable by State for State’s preparation and/or completion of the premises and accomplishing the move-in: building lobby; hallways on floor on which premises are located (including walls, flooring, ceiling, lighting, restrooms, etc.); elevators, including, but not limited to, the elevator designated for moving of furniture and freight; HVAC, utilities, and plumbing serving the premises; and the doors and hardware on such doors.

D Broom Clean: The premises shall be broom clean.

E Inspection and Punch List: Prior to lease commencement and/or occupancy, the parties shall inspect the premises, have all systems demonstrated, and prepare a punch list. The punch list shall list incomplete, minor, or insubstantial details of construction; necessary mechanical adjustments; and needed finishing touches. Said list shall be prepared by, or reviewed and approved by the State Project Space Planner prior to implementation of constructions and, or repairs. Lessor will complete the punch list items within 14 days after occupancy of the premises. Lessor will promptly commence and diligently continue to correct any latent defects, as they become known pursuant to lease agreement. The acceptance of the premises by the State shall not constitute a waiver of any defect in lessor’s construction or a waiver any warranty or future code compliant item.

F Substantial completion shall be based on the complexity of construction, tenant’s move-in date, installation of MSF, code-related items and all items as described in Exhibits ‘A’ and ‘B’. Planner will make the final determination of when substantial completion was achieved.
DIVISION 3 -- SPECIAL PROVISIONS

The following Special Provisions supplement requirements specified in Divisions 1 and 2 and supersede requirements, which are in conflict; see Planner for direction on discrepancies and conflicts:

There are no SPECIAL PROVISIONS for this project!
APPENDIX B (Exhibit ‘C’)

California Department of General Services

State Fire Marshal, CBC/ADA Access Compliance & Sustainable Measure Procedures
EXHIBIT ‘C’ — State Fire Marshal, CBC/ADA Access Compliance & Sustainable Measure Procedures

PROJECT: 
AGENCY: 
LOCATION: 
PROJECT NO. 
DATE:

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| 5.03     | SFM FIRE SAFETY CORRECTION & FINAL CONSTRUCTION APPROVAL, FORM – D | 14   |
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| 5.05     | APPLICATION FOR APPROVAL OF PLANS & SPECIFICATIONS, FORM - F | 16   |
| 5.06     | VERIFIED REPORT, FORM - G           | 17   |
| 5.07     | SUSTAINABLE REPORTING – FORM H      | 18-19|

Confirmation Statement

I/we have read this Exhibit ‘C’ Specification and understand it is incorporated into, and is part of, this lease. I/we have acknowledged each and every page by placing my/our initials on this cover sheet.

Exhibit C (4/28/06)

Initials __________
DIVISION 1 – AUTHORITY AND POLICY REQUIREMENTS

1.00 GENERAL

A. The State of California and its governing agencies have mandated that the Department of General Services (DGS), Real Estate Services Division (RESD) adhere to all regulations, policies and state statutes for all state agencies leasing private sector building space.

B. This Exhibit C document is a binding part of the lease document and shall function with Exhibits A and B.

C. The forms contained in Division 5 are for the Lessor’s reference. A separate Lessor's forms packet will be provided by RESD for the Lessor’s use. The forms contained in the “Lessor’s Packet” are to be used by the Lessor to accomplish the processes required by this document.

D. Federal (ADA) and California Building Code (Title 24) accessibility requirements are combined and noted hereafter as CBC/ADA.

E. Abbreviations: State Fire Marshal (SFM), Division of the State Architect (DSA), Real Estate Services Division (RESD).

1.01 STATE FIRE MARSHAL AUTHORITY

A. Section 13108 of the California State Health and Safety Code gives the State Fire Marshal (SFM) authority for enforcement of fire protection regulations for State owned and State occupied leased buildings or premises. This authority encompasses both plan review and construction inspections of all leased facilities.

B. If at any time during the Design, Construction Document Review, or Construction Inspection processes, a conflict arises between the State and local authorities, the Lessor/architect will compile all pertinent information and present the situation through the RESD Space Planner to SFM. SFM has final authority in the determination of compliance and will take the lead in the resolution of problems or suitable interpretation of code.

1.02 ACCESS COMPLIANCE AUTHORITY

A. California law incorporates the Americans with Disabilities Act requirements. California Government Code provides that buildings shall be made accessible to, and usable by, persons with disabilities, whether they are leased, rented, contracted, sublet, or hired by any municipal, county, or state divisions of government, or special district. California Building Standards Code defines that all state facilities shall meet the federal Architectural Barriers Acts.

B. These statutes, in addition to, the California Building Code, Title 24, generate the need for a standard process to ensure access compliance with respect to state leased facilities.

C. The Division of the State Architect is charged with the responsibility of ensuring compliance with the above standards.
DIVISION 1 – AUTHORITY AND POLICY REQUIREMENTS

1.02 ACCESS COMPLIANCE AUTHORITY - Continued

D. If at any time during the Design, Construction Document Review, or Construction Inspection processes, a conflict arises between the State and local authorities, the Lessor/architect will compile all pertinent information and present the situation to the RESD Space Planner.

E. DSA has delegated a component of the access responsibility to RESD for leased facilities. Conforming to DSA delegation, RESD is requiring the Lessor to ensure compliance by utilizing one of the two procedures defined in this document. Refer to Division 3 for specific requirements and procedures.

F. Public right-of-way access is required for all leased facilities. In case that the existing conditions do not meet the required codes and regulations, the design professional (Lessor’s architect) must clearly demonstrate and document a diligent effort in requesting that the authority (or control) over the public right-of-way, make the necessary upgrades and modify sidewalks, curb cuts, etc. to secure right-of-way access. All correspondence shall be documented and copies must be forwarded to RESD Space Planner to include in the project file.

1.03 SUSTAINABLE AUTHORITY

A. As directed by Executive Order D-16-00, the sustainability measures in state leased facilities is to site, design, construct, renovate, operate, and maintain state buildings that are models of energy, water, and materials efficiency; while providing healthy, productive and comfortable indoor environments and long-term benefits to Californians. The acceptable sustainable products and process for leased facilities are outlined in the Exhibit B and C documents.

B. The Lessor is charged with the responsibility of providing comprehensive data that illustrates where sustainable products and/or services were met as indicated in the Exhibit documents.

End of Authority and Policy Requirements
DIVISION 2 – STATE FIRE MARSHAL PROCEDURE

2.00 RESD LEASE EXHIBIT “A”

A. Prior to the lease execution, the RESD Space Planner is responsible for the development and submittal of the lease Exhibit “A” space plan(s) to the SFM for general review and approval. The approved exhibit plan(s) will reflect the design concept for the proposed lease within the configuration of the existing building shell. The Exhibit “A” drawing will conform to the general ingress/egress and fire/life safety requirements of the SFM. If RESD elects to use a Facilities Design Program (FDP) in place of the Exhibit “A” Space Plan the SFM review and approval will follow lease execution and development of preliminary architectural drawings by the Lessor. (Note: The FDP is a narrative document that defines the project requirements in place of an architectural space plan. It is not referred to within the rest of this Exhibit C).

2.01 CONSTRUCTION DRAWINGS

A. Construction Drawings are the responsibility of the Lessor. The Lessor is required to obtain the services of a licensed architect to develop construction drawings based on the Exhibit A for permitting and the construction. Specific technical elements of the construction e.g., fire alarm and smoke detection systems, fire sprinklers, construction details of fire assemblies, etc. shall be included with the construction drawings. The Exhibit A document does not reflect construction technical requirements and will not be substituted for the construction drawings.

2.02 PLAN REVIEW AND APPROVAL

A. The Lessor’s architect is required to submit the construction drawings to the SFM for plan review and approval prior to construction. Note: In projects which do not require alterations (and therefore do not require construction documents), this process will not apply, meaning the Lessor is not required to submit construction drawings to the SFM.

B. The Lessor’s architect shall submit the SFM Plan Review Application Form A (Page 11) concurrent with the construction drawings (minimum 90% complete) to the State Fire Marshal in Sacramento. There is no fee associated with the SFM review process.

C. The Plan Review Application form and all submittals shall be sent to:
   Office of State Fire Marshal, Code Enforcement
   1131 S Street
   Sacramento, California, 95814
   Contact telephone: (916) 324-3783.

   This form must be filled out completely, inclusive of the return address for which the approved documents will be returned. Review time is generally consistent with any local city authority permitting process.

D. The approved drawings or revisions requests will be returned to the address shown on the Plan Review Application and will be accompanied by either a SFM Plan Review Approval Form B (Page 12) or a SFM Plan Review Transmittal Form C (Page 13). The Lessor/architect shall provide a copy of the approved form to the RESD Space Planner for the permanent file.
DIVISION 2 – STATE FIRE MARSHAL PROCEDURE

2.03 CONSTRUCTION INSPECTION

A. A regional Deputy State Fire Marshal will inspect the leased facility. There are two regions, Code Enforcement North and Code Enforcement South. Call (916) 445-8550 to determine the local contact information. The appropriate regional office will be required to inspect and approve the construction. The Lessor/architect/contractor shall be responsible for contacting the regional Deputy State Fire Marshal for coordination of the inspections. The Lessor/architect/contractor shall inform the regional office of their proposed construction schedule pertaining to the leased space.

B. After completion of each successive SFM construction inspection, any deficiencies will be recorded on the SFM Fire Safety Correction Notice Form D (page 14). This form is signed as received by a Lessor’s representative on site. A final sign off by the Deputy State Fire Marshal is recorded on this document. The Lessor shall send a copy of this form to the RESD Space Planner.

End of SFM Process
DIVISION 3 – CBC/ADA ACCESS COMPLIANCE PROCEDURE

3.00 GENERAL

A. To comply with the accessibility requirements and ensure that the facility has complied with CBC/ADA accessibility codes and regulations, the Lessor is required to complete one of the two processes defined in this division. In each process RESD will remain the primary contact. The facilities are categorized by size as Group I or Group II projects. Each category has specific requirements as defined. Group I projects are submitted to and managed by RESD. Group II facilities are officially submitted to DSA for plan review and approval. The Lessor is required to follow the procedure of the applicable process and is responsible for the associated costs.

3.01 FEE REQUIREMENT

A. The Lessor is required to submit a predetermined fee directly to RESD or DSA regional office for administrative costs for Group I or II facilities. The fees are based on the building size, and a formula established by DSA. The RESD Space Planner using the CBC/ADA Access Compliance Fee Calculation Form E (page 15) will calculate the required fee and include in the final Exhibit C document. The fee procedure and payment is defined in the respective Group I or II Facility Procedure.

3.02 DETERMINATION OF FACILITY GROUP

A. In this Section 3.02, the group is determined by facility category and square footage of the State’s net usable leased area. The designation of Group I or Group II will also determine the administration process. Each project will be associated with either one of two facility group types. The respective administrative process is defined in the following Sections 3.03 (Group I) and 3.04 (Group II). The Group Types are defined below:

**FACILITY GROUP:**

**Group I:**

<table>
<thead>
<tr>
<th>Building Type</th>
<th>Net Usable Square Footage:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Office Buildings</td>
<td>Less than 100,000 square feet</td>
</tr>
<tr>
<td>Existing Warehouse Buildings</td>
<td>Less than 500,000 square feet</td>
</tr>
<tr>
<td>Any Building to be Constructed</td>
<td>Less than 30,000 square feet</td>
</tr>
</tbody>
</table>

**Group II:**

<table>
<thead>
<tr>
<th>Building Type</th>
<th>Net Usable Square Footage:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Office Buildings with Alterations</td>
<td>100,000 sq. ft. or greater</td>
</tr>
<tr>
<td>Existing Warehouse Buildings with Alterations</td>
<td>500,000 sq. ft. or greater</td>
</tr>
<tr>
<td>Any Building to be Constructed</td>
<td>30,000 sq. ft. or greater</td>
</tr>
</tbody>
</table>

**Note:** At the discretion of the State, for Group I, building type “Any Building to be Constructed”, the State may elect to follow the Group II process, regardless of the square footage. The RESD Space Planner will identify which process (either Group I or II) to the Lessor during lease negotiations.
DIVISION 3 – CBC/ADA ACCESS COMPLIANCE PROCEDURE

3.03 GROUP I FACILITY PROCEDURE

For Group I facilities the Lessor is required to complete the requirements outlined in items A through D which are further defined in the associated paragraphs that follow.

A. Hire an accessibility consultant to perform a CBC/ADA accessibility survey and send to the RESD Space Planner.
B. Send a fee for administrative costs to DGS, RESD (see Fee Payment, paragraph B below).
C. Incorporate the survey results into the construction documents.
D. Complete a Verified Report after finalization of construction and send to the RESD Space Planner.

A. Accessibility Survey: The Lessor must have an accessibility survey completed prior to the finalization and approval of the construction documents. The survey must be completed using the DGS’ Accessibility Checklist for State-Leased Buildings and Facilities. The following consultants are acceptable:

1. DSA certified accessibility consultants trained for Leased facilities www.resd.dgs.ca.gov/PSB/realestate.htm
2. ICC Accessibility Inspector/Plans Examiner www.iccsafe.org/e/certsearch.html
3. Architect licensed in the State of California

A.1 The consultant will survey the facility and site per U.S. Department of Justice, Civil Rights Division, Disability Rights Section, Title II and CBC/ADA, including all exterior and interior areas serving the path of travel and use of all state leased space. Physical barriers will be identified from the point of arrival (parking, drop-off, etc.) throughout the interior of each facility. Elements to be evaluated include, but are not limited to, path of travel from/to public transportation and public rights-of-way, parking, passenger drop-off and loading zones, walks and sidewalks, curb ramps, ramps, stairs, entrances and exits, lobbies, elevators, access lifts, doors and gates, access to and through all rooms and spaces, restrooms, signs and identification, counters, waiting and seating areas, assistive listening systems, telephones, drinking fountains, alarms, and horizontal / vertical access, etc. Consultants will observe and record all deficiencies, as well as provide solutions needed to bring facility into compliance with sufficient detail to allow Lessor or his/her agent to develop a cost estimate for proposed barrier removal. Should all areas mentioned above not be fully constructed, consultants shall review the construction documents in addition to the physical evaluation.

B. Fee Payment: The Lessor shall prepare a check payable to the Dept. of General Services, Real Estate Services Division. Lessor shall enclose a copy of the CBC/ADA Access Compliance Fee Calculation Form E (page 15) as prepared by the RESD Space Planner, along with payment and mail to DGS, RESD (Include the project number on the check to RESD).

C. Construction Documents: The Lessor’s Architect will incorporate all items defined in the accessibility survey into the construction documents. The Lessor shall submit the completed drawings to RESD for review.

D. Verified Report: Following the completion of construction, the Lessor’s architect is responsible for verifying that the items outlined in the accessibility survey and incorporated into the construction documents have been completed. The Verified Report Form G (page 17) shall be signed by the Lessor’s architect. The architect shall forward the signed Verified Report to RESD Space Planner prior to the final inspection that will be performed by RESD. The project will not be accepted for occupancy prior to receipt of this document.

End of Group I Procedure
DIVISION 3 – CBC/ADA ACCESS COMPLIANCE PROCEDURE

3.04 GROUP II FACILITY PROCEDURE

The Lessor is required to submit plans and specifications to the Division of the State Architect (DSA) for access compliance review and approval. Although the formal process for access compliance plan review and approval is processed through DSA, the Department of General Services RESD will act as the primary managers for the project. The Lessor’s architect shall inform RESD of the status in receiving approval from DSA.

For Group II facilities, the Lessor is required to complete the requirements outlined in items A through F which are further defined in the associated paragraphs that follow.

A. Hire an accessibility consultant to perform a CBC/ADA accessibility survey and send to RESD Space Planner, (required only when a building exists).
B. Prepare construction drawings and specifications.
C. Send Fee Payment and submittal package for plan review to the respective DSA regional office (see Fee Payment, paragraph C below).
D. Receive DSA Plan Approval.
E. Complete a Verified Report

A. Accessibility Survey: The Lessor must have an accessibility survey completed prior to the finalization and approval of the construction documents. The survey must be completed using the DGS Accessibility Checklist for State-Leased Buildings and Facilities. The following consultants are acceptable:

1. DSA certified accessibility consultants trained for Leased facilities
   www.resd.dgs.ca.gov/PSB/realestate.htm
2. ICC Accessibility Inspector/Plans Examiner
   www.iccsafe.org/e/certsearch.html
3. Architect licensed in the State of California

Note: See Section 3.03, paragraph A.1 (Group I Facility Procedure) for parameters of survey.

B. Construction Drawings and Specifications: The Lessor is required to retain an architect licensed in the State of California to design and develop plans and specifications in accordance with the lease exhibits and applicable codes and regulations. The Lessor’s architect will incorporate all items defined in the accessibility survey into the construction documents. The architect is required to stamp and sign the construction documents.

C. Fee Payment: In accordance with the calculation of fees per the CBC/ADA Access Compliance Fee Calculation Form E (page 15), the Lessor shall prepare a check payable to the Division of the State Architect. This check along with a copy of the CBC/ADA Access Compliance Fee Calculation Form E shall be forwarded to the appropriate regional DSA office as part of the submittal package.

D. Submittal Package: The submittals shall be sent to the appropriate DSA regional office. The state is divided into four regions, San Francisco Bay Area, Sacramento, Los Angeles and San Diego. The relevant DSA regional office that would administer your specific project can be confirmed by calling DSA (916) 445-8100. The submittal package must be complete before the DSA accepts the project for review. The submittal package shall include the following items:

1. One set of completed construction plans and specifications.
2. A completed Application for Approval of Plans and Specifications Form F (pg. 16).
3. Application Fee.
4. Copy of CBC/ADA Access Compliance Calculation Fee Form E.
DIVISION 3 – CBC/ADA ACCESS COMPLIANCE PROCEDURE

Upon receipt of the submittal package, a DSA application number is assigned to the project for tracking purposes. A preliminary review for completeness is performed within a few days. Plan review is scheduled after DSA verifies that a complete submittal package has been received. Plan review commences within four to six weeks of initial submittal for most large projects. Verify plan review timelines with the regional office. Access Compliance review is typically completed within three to four weeks. At times of high workload, DSA contracts with private plan reviewers to expedite the plan review process.

E. **DSA Plan Approval:** Once approval has been granted by DSA, the Lessor is required to construct the project in accordance with the plans, specifications, and lease exhibits. The Lessor shall forward a copy of DSA’s letter of approval to the RESD Space Planner. Construction shall not commence until this process has been completed.

F. **Verified Report:** Following the completion of construction, the Lessor’s architect is responsible for verifying that the accessibility requirements whether federal or state have been incorporated into the construction and are completed. The **Verified Report** Form G (page 17) shall be signed by the Lessor’s architect. The architect shall forward the signed Verified Report to RESD Space Planner prior to the final inspection that will be performed by RESD. The project will not be accepted for occupancy prior to receipt of this document.

*End of Group II Procedure*
DIVISION 4 – REPORTING SUSTAINABLE MEASURES

4.00 GENERAL

A. All new and renewed State lease spaces shall utilize sustainable products. The Lessor shall provide the state with quantities associated with these measures.

B. To identify specific sustainable measures implemented on this project the Lessor is required to complete the Sustainable Measures Report Form H (page 18). The Lessor is required to send this report to the RESD Space Planner prior to occupancy and acceptance of space.

4.01 SUSTAINABLE MEASURES AND COST REPORT

A. Completion of the Sustainable Measures Report requires a notation in one of two columns for each item listed in the “Description” column. Each item shall be noted as one of two choices: 1) total quantity, or 2) not applicable.

   Each is explained below:

   1. Total Quantity: Provide the total quantity amount for the sustainable item that was implemented on this particular project.

   2. Not Applicable (N/A): For items that are not applicable because they were not part of the tenant improvements, place a check in each column.

End of Sustainable Measures
# PLAN REVIEW APPLICATION

(Must be submitted with all plans, specifications and deferred approvals)

Please Print or Type

<table>
<thead>
<tr>
<th>AGENCY NAME:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PROJECT NAME:</td>
<td></td>
</tr>
<tr>
<td>RESD PROJECT #:</td>
<td></td>
</tr>
<tr>
<td>PROJECT ADDRESS:</td>
<td></td>
</tr>
<tr>
<td>COUNTY:</td>
<td></td>
</tr>
<tr>
<td>ESTIMATED CONTRACT COST:</td>
<td></td>
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<tr>
<td>BID DATE:</td>
<td></td>
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<td>CONTACT PERSON:</td>
<td></td>
</tr>
<tr>
<td>TELEPHONE NUMBER:</td>
<td></td>
</tr>
<tr>
<td>FIRM:</td>
<td></td>
</tr>
<tr>
<td>ADDRESS:</td>
<td></td>
</tr>
<tr>
<td>COMMENTS:</td>
<td></td>
</tr>
</tbody>
</table>

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**SFM USE ONLY – BELOW THIS LINE**

| DATE RECEIVED: |  |
| SFM FILE #: |  |
| PCA #: |  |

---

Conservation is wise - keep California green and golden

Please remember to conserve energy. For tips and information, visit “Flex Your Power” at WWW.CA.GOV
5.01 SFM PLAN REVIEW APPROVAL, FORM B

(This is for Reference Only – The Lessor will receive this Plan Review Approval form or the Plan Review Transmittal form (next page) with the plans that were submitted for review and approval to the SFM)

STATE OF CALIFORNIA - THE RESOURCES AGENCY

ARNOLD SCHWARZENEGGER, Governor

OFFICE OF THE STATE FIRE MARSHAL
Code Enforcement – North
DEPARTMENT OF FORESTRY AND FIRE PROTECTION
1131 “S” Street (95814)
P.O. Box 944246 (94244-2460)
Sacramento, CA
Web Site: http://osfm.fire.ca.gov
(916)445-8550
(916)324-3784 FAX

PLAN REVIEW APPROVAL

TO: ________________________    DATE: ______________________________

____________________________________   CSFM:________________________________

____________________________________

____________________________________

FACILITY NAME:__________________________________________________________________

FACILITY ADDRESS:______________________________________________________________

PROJECT DESCRIPTION:__________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

Reproducible plans and specifications for the project described and included in the plan review transmittal dated _______________ are approved by this office and were stamped________________ .

Nothing in our review shall be construed as encompassing structural integrity. Approval of this plan does not authorize or approve any omission or deviation from applicable regulations. Final approval is subject to field inspection. One set of approved plans shall be available on the project site at all times.

If you have any questions, please contact me at ________________.

_________________________________________

Deputy State Fire Marshal

cc: [ ] Code Enforcement – North
   [ ] Code Enforcement – South
   [ ] Field File

RECORD #: ______________
RECEIVED DATE: ______________

CONSERVATION IS WISE-KEEP CALIFORNIA GREEN AND GOLDEN
PLEASE REMEMBER TO CONSERVE ENERGY, FOR TIPS AND INFORMATION, VISIT “LEX YOUR POWER” AT WWW.CA.GOV
DIVISION 5 – FORMS

5.02 SFM PLAN REVIEW TRANSMITTAL, FORM C

STATE OF CALIFORNIA - THE RESOURCES AGENCY

ARNOLD SCHWARZENEGGER, Governor

OFFICE OF THE STATE FIRE MARSHAL
Code Enforcement - North
DEPARTMENT OF FORESTRY AND FIRE PROTECTION
1131"S" Street (95814)
P.O. Box 942446 (94244-2460)
Sacramento, CA
Web Site: http://osfm.fire.ca.gov
(916) 445-8550
(916) 324-3784 FAX

PLAN REVIEW TRANSMITTAL

TO:____________________________________  DATE:________________________________
____________________________________  CSFM:________________________________
____________________________________
____________________________________
FACILITY NAME:_________________________________________________________________
FACILITY ADDRESS:______________________________________________________________
PROJECT DESCRIPTION:__________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________

As requested, we have reviewed []Plans [] Specifications [] Change Order [] Addendum [] Instructional Bulletin [ ] Request for Information [ ] Equipment Submittal for the project listed above to determine conformance with the fire and life safety standards of Titles 19 and 24, California Code of Regulations. By copy of this transmittal we are:

[ ] advising you that the items listed above were found to be in accordance with the applicable provisions of Title 19 and 24.

[ ] returning the items listed above to you for review. Consideration must be given to all comments noted in red pencil on the documents.

[ ] requesting that you contact our office at the telephone number listed below for an appointment for our stamp of approval or back check. Submit the plans with our official comments at the time of the back check.

Nothing in our review shall be construed as encompassing structural integrity. Approval of this plan does not authorize or approve any omission or deviation from applicable regulations. Final approval of this project is subject to field inspection.

If you have any questions, please contact me at ________________.

_________________________________________
Deputy State Fire Marshal

CC: [ ] Code Enforcement – North  RECORD #:__________________
[ ] Code Enforcement – South  RECEIVED DATE:________________
[ ] Field File

CONSERVATION IS WISE-KEEP CALIFORNIA GREEN AND GOLDEN
PLEASE REMEMBER TO CONSERVE ENERGY. FOR TIPS AND INFORMATION, VISIT “FLEX YOUR POWER” AT WWW.CA.GOV

Exhibit C (4/28/06) 13
DIVISION 5 – FORMS

5.03 SFM FIRE SAFETY CORRECTION NOTICE
and/or
FINAL CONSTRUCTION APPROVAL - FORM D

OFFICE OF THE STATE FIRE MARSHAL
Code Enforcement - North
DEPARTMENT OF FORESTRY AND FIRE PROTECTION
1131"S" Street (95814)
P.O. Box 944246 (94244-2460)
Sacramento, CA
Web Site: http://osfm.fire.ca.gov
(916) 445-8550
(916) 324-3784 FAX

Fire Safety Correction Notice

File Number: _______________________

Name: ____________________________

Address: ___________________________________________________________________

The California Health and Safety Code and the State Fire Marshal’s regulations require the following fire safety deficiencies be corrected.

The above deficiencies are to be corrected within ________ days. When ALL deficiencies have been corrected, sign and return the certification on the opposite side of this form. If you have any questions, contact the Office of the State Fire Marshal at (__) _______ - _________.

ISSUED BY (Deputy State Fire Marshal) RECEIVED BY DATE

CONSERVATION IS WISE-KEEP CALIFORNIA GREEN AND GOLDEN
PLEASE REMEMBER TO CONSERVE ENERGY. FOR TIPS AND INFORMATION, VISIT “FLEX YOUR POWER” AT WWW.CA.GOV

Exhibit C (4/28/06) 14
DIVISION 5 – FORMS

5.04 CBC/ADA ACCESS COMPLIANCE FEE CALCULATION

FORM E

CBC/ADA Access Compliance Fee Calculation Form

<table>
<thead>
<tr>
<th>RESD Planner:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agency:</td>
<td></td>
</tr>
<tr>
<td>Address:</td>
<td></td>
</tr>
<tr>
<td>Project Number:</td>
<td></td>
</tr>
<tr>
<td>Project Name:</td>
<td></td>
</tr>
</tbody>
</table>

For GROUP I Facilities, Send To: Dept. of General Services
Real Estate Services Division
Professional Services Branch
707 3rd Street, Suite 5-305
Sacramento, California 95605

For GROUP II Facilities, Send To: DSA Regional Office
See DSA Website for offices in your area at www.dsa.dgs.ca.gov/ContactDSA/default.htm

<table>
<thead>
<tr>
<th>Project Type</th>
<th>Project Size</th>
<th>Project Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(net usable s.f.)</td>
<td>(PV)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Existing Warehouse Buildings</td>
<td>$20/sf</td>
<td>$</td>
</tr>
<tr>
<td>☐ Existing Office Buildings</td>
<td>$50/sf</td>
<td>$</td>
</tr>
<tr>
<td>☐ New Construction Build-to-Suit</td>
<td>$150/sf</td>
<td>$</td>
</tr>
</tbody>
</table>

GROUP I (Under $5,000,000)

<table>
<thead>
<tr>
<th>Project Value</th>
<th>Multiplier</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>PV X 0.2% of 1st $500,000 =</td>
<td>$</td>
<td>-</td>
</tr>
<tr>
<td>Remainder of PV x 0.1% =</td>
<td>$</td>
<td>-</td>
</tr>
<tr>
<td>Remainder between 2M and 5M x .01%</td>
<td>$</td>
<td>-</td>
</tr>
<tr>
<td>Calculated total =</td>
<td>$</td>
<td>-</td>
</tr>
<tr>
<td>x 10% (QA or $200 Minimum) = Total Fee</td>
<td>$</td>
<td>200</td>
</tr>
</tbody>
</table>

GROUP II (Over $5,000,000)

<table>
<thead>
<tr>
<th>Project Value</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>PV x 0.2% of 1st $500,000</td>
<td>$</td>
</tr>
<tr>
<td>0.1% x $1,500,000</td>
<td>$</td>
</tr>
<tr>
<td>Value between 2M and 5M x .01%</td>
<td>$</td>
</tr>
<tr>
<td>Remainder of PV x 0.01% =</td>
<td>$</td>
</tr>
</tbody>
</table>

Total Fee | $ | - |

Total Lessor Fee Obligation: $ 200
DIVISION 5 – FORMS

5.05 APPLICATION FOR APPROVAL OF PLANS AND SPECIFICATIONS - FORM - F

UNIVERSAL DESIGN
APPLICATION FOR APPROVAL OF PLANS AND SPECIFICATIONS
( FOR STATE LEASED FACILITIES – Group II Category Only)

DSA-UD/RESD 100-46.1 (Revised 10/02)

<table>
<thead>
<tr>
<th>Project Name/ Description</th>
<th>RESD Project #</th>
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<tbody>
<tr>
<td>Owner / Lessor</td>
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<tr>
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<td>Street Address (no P.O. Box Numbers)</td>
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<tr>
<td>City</td>
<td>State</td>
</tr>
<tr>
<td>Construction of (Name of Buildings)</td>
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<tr>
<td>Alterations to (Name of Buildings)</td>
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<tr>
<td>Additions to (Name of Buildings)</td>
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The project is in the City of ______________________, County of ______________________

Location (Street Address)

Architectural or Engineering Firm

Telephone No. | Fax No.

Address (no P.O. Box numbers)

Project Contact Person

Telephone No. | Fax No.

The application, plans, and specifications shall be submitted to:

Oakland Regional Office
1515 Clay Street, Suite 1201
Oakland, CA 94612

Sacramento Regional Office
1102 "Q" Street, Ste. 5200
Sacramento, CA 95814

Los Angeles Regional Office
311 So. Spring Street, Suite 1301
Los Angeles, CA 90013

San Diego Regional Office
16680 W. Bernardo Drive
San Diego, CA 92127

The plans, specifications and filing fee of $____________________ accompanying this application are a part thereof.

For DSA Use

Signature of Applicant

Checked by | Date A # Assigned | Fee Schedule
Correct Fee | Fee Paid | OP / UP
Refund
Application Number | File Number

Refund
Mailing Address of Applicant

Signature of Applicant

This __________ day of ____________________, 20 _____
### DIVISION 5 – FORMS

**5.06 VERIFIED REPORT, FORM G**

State Leased Buildings and Facilities  
Verified Report - Form G

<table>
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<td>RESD Planner:</td>
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This report includes all construction work through the date of: ______________ month ______________ day ______________ year

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<th>Interior Work</th>
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<tr>
<td>Parking &amp; Accessible Stalls</td>
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<td>Doors &amp; Gates</td>
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<tr>
<td>Walks &amp; Sidewalks</td>
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<td>Information / Reception Counter</td>
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<tr>
<td>Curb Ramps</td>
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<td>Elevators / Ramps / Lifts</td>
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<td>Stairways</td>
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<td>Sanitary Facilities / Sinks / Drinking Fountains</td>
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<tr>
<td>Ramps &amp; Landings</td>
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<td>Stairwells / Exits</td>
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<td>Accessible Main Entrance</td>
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<td>Conference / Meeting / Assembly Rooms</td>
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<td>Wayfinding &amp; Signage</td>
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</table>

Total Project Percentage of Completion:

*All items required to be 100% complete unless Hardship approved by DSA or Mitigation Plan outlined in lease.*

List work and % to be completed (attach additional pages as necessary):

---

I declare under penalty of perjury that I have read the above report and know the contents thereof: that all of the above statements are true and that I know of my own personal knowledge that the work during the period covered by the report has been performed and materials used and installed, and in every material respect are in compliance with the duly approved plans and specifications therefore.

<table>
<thead>
<tr>
<th>Architect:</th>
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<tbody>
<tr>
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Submit completed forms to location indicated below:

<table>
<thead>
<tr>
<th>DGS/RESD</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>attn: Planner: Real Estate Services Division</td>
<td></td>
</tr>
<tr>
<td>707 Third Street, Suite 5-305</td>
<td></td>
</tr>
<tr>
<td>West Sacramento, CA 95605</td>
<td></td>
</tr>
</tbody>
</table>

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Exhibit C (4/28/06) 17
### SUSTAINABLE MEASURES REPORT

**SUBMIT COMPLETED REPORT TO:**
Department of General Services
Professional Services Branch
Real estate Services Division
707 Third Street, Suite 5-305
West Sacramento, CA  95798-9052

| PROJECT NUMBER: \n| AGENCY: \n| ADDRESS: \n| RESD SPACE PLANNER: \n| DATE: | |

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<tr>
<th>EXHIBIT B REFERENCE</th>
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<tr>
<td>01.03  1-3</td>
<td>RECYCLE: Site separation method to maintain a minimum standard of 50% diversion of construction and demolition materials from the landfills.</td>
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<tr>
<td>02.00  D12</td>
<td>CARPET: The carpet and/or backing must contain a minimum 20% of post consumer and/or postindustrial recycled material.</td>
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<tr>
<td>02.09  A2</td>
<td>TOILET ROOM PARTITIONS: New stalls called out in Exhibit A shall be manufactured using a minimum of 50% recycled density polyethylene plastic coloring and flame retardant agents that are both recycled and recyclable.</td>
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<td></td>
</tr>
<tr>
<td>02.09  B</td>
<td>SUNLIGHT CONTROL: For sunlight control the use of: exterior overhangs, fins. Solar screens, reflective glass coatings, reflective glass panes or device approved by RESD</td>
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<td></td>
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<tr>
<td>02.10  C</td>
<td>PLUMBING: Use of energy and resource efficient fixtures and accessories (See general criteria in Exhibit B)</td>
<td></td>
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<tr>
<td>02.16  B</td>
<td>PARKING/PAVING: If new material is used for repair or re-paving; the existing asphalt shall be ground for fill.</td>
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</table>

*Continued next page*
<table>
<thead>
<tr>
<th>EXHIBIT B REFERENCE</th>
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<tr>
<td>02.17 A</td>
<td><strong>LANDSCAPING</strong>: New landscaping shall be of locally drought tolerant variety</td>
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<tr>
<td>02.17 B</td>
<td>Deciduous trees planted on West, East or South sides per Exhibit A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>OTHER SUSTAINABLE MATERIALS AND MEASURES IMPLEMENTED.</strong></td>
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<td></td>
<td><strong>OTHER SUSTAINABLE MATERIALS AND MEASURES IMPLEMENTED.</strong></td>
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LESSOR'S SIGNATURE: ___________________________
APPENDIX C

Fireman’s Fund White Paper
APPENDIX C
Fireman’s Fund White Paper

Green Buildings Address Real Estate Issues

Fireman’s Fund research has told us that real estate owners and managers have several fundamental concerns that are consistent over real estate market cycles. How owners and managers address these issues is often the difference between success and failure in the real estate industry.

Critical Issues facing Real Estate Owners
- Protect and grow asset value
- Protect and build NOI (net operating income)
- Attract and retain quality tenants

All of our differentiators have been developed with these issues in mind. However, green buildings produce a powerful economic value proposition that positions Green-Gard as the most compelling coverage we offer.

Protect and Grow Asset Value:
A McGraw-Hill Construction Smart Market Report from 2006 showed green buildings average an increase of 7.5 percent in building values. That means green buildings may provide a 6.6 percent or better return on investment.

Gregory Kats, chairman of the Energy and Atmosphere Technical Advisory Group for LEED®, in his review of 60 LEED®-rated buildings, concluded that an up-front investment of less than two percent of construction costs yields lifecycle savings of over 10 times the initial investment. That means an initial investment of up to $100,000 to incorporate green building features into a $5 million project would result in a savings of at least $1 million over the life of the building.

Just as green buildings are becoming more attractive to tenants, standard buildings may actually become unattractive, resulting in lower asset values and making them less desirable to lenders and investors.

As Charles Lockwood, a noted real estate consultant, wrote in the Harvard Business Review in 2006, “While the looming shift to green buildings brings many benefits to companies, it also brings massive obsolescence to hundreds of billions of dollars in existing commercial space in the U.S. and worldwide. The owners of standard buildings must act now to protect their investments.”
Protect and build NOI (net operating income)
The Environmental Protection Agency (EPA) estimated in 2001 that a 30 percent reduction in energy use equates to a five percent increase in net operating income – roughly generating a $25,000 annual bottom-line improvement for every 50,000 square feet of occupied office space.

The practical savings were highlighted in a report by GreenOrder and Thomas Properties outlining how the Joe Serna Jr. California EPA Headquarters Building, a platinum-designated Leadership in Energy and Environmental Design (LEED®) building, realized a savings of $1.50 per square foot annually or $1.425 million.

In 2006, the National Multi-Housing Council reported that green multi-family buildings realized a 5 to 10 percent increase in rents over traditional buildings within the same area with similar amenities.

LEED® buildings also achieve higher rents, with an annual average rent of $37 per square foot for all LEED® office space and $39 for Class A LEED® space, compared to $29 for all Class A office buildings. (CoStar & RREEF Research 2007)

Attract and retain quality tenants

A 2003 study by the Lawrence Berkeley National Laboratory found that improving indoor air quality could save U.S. businesses up to $58 billion in time lost due to illness each year, with another $200 billion earned in increased worker performance. Less sick time means more productivity. Four attributes of green design – increased ventilation and daylight and improved temperature, and lighting controls – have been positively and significantly connected with increased productivity.

A West Bend Mutual study on productivity indicates gains of 16 percent for employees in green buildings. A positive work environment can also enhance recruitment and improved morale.

The 1999 “Skylighting and Retail Sales” study by the Heschong Mahone Group indicates that retail sales can increase by as much as 40 percent in buildings with natural lighting. Wal-Mart’s movement to green speaks volumes toward the advantages of green retail.

Vacancy rates for both ENERGY STAR® and LEED® buildings are below those for conventional buildings. In the office sector for example, 6.9% of the space in the LEED® buildings and 8.1% of the space in ENERGY STAR® buildings are vacant, compared to 11.2% in the entire CoStar inventory. Overall, the vacancy rate in all sectors together is 6.1% for LEED® space and 8.0% for ENERGY STAR® buildings, compared to 8.6% for all buildings. (Source: CoStar & RREEF Research 2007)
APPENDIX D

GREEN BUILDING ORDINANCES

IN CALIFORNIA
APPENDIX D
Green Building Ordinances in California

Summary of Findings

• There has been a recent major push by California local governments to establish green building ordinances.

• Green building ordinances are not yet universal across the state. To-date, they are focused in urban, coastal counties and cities.

• There has been some convergence around minimum standards (LEED®, GreenPoints), but much variation exists in ordinances across various jurisdictions.

• Enacting green building ordinances creates challenges for cities with respect to balancing regulator duties with stakeholder concerns.

• There are potential opportunities for utility companies to assist in overcoming barriers, using incentives and bonuses in conjunction with mandatory regulations.

Introduction and Background

Public awareness of global warming and the level of political and media attention given to climate change has increased significantly in the past few years. Research and conclusions drawn from sources such as the UN’s Intergovernmental Panel on Climate Change (IPCC) strongly indicate the need for action by governments to address the issue.

California’s strong stance in addressing climate change and mitigating global warming risks has been evident through legislative outcomes, most notably, the Global Warming Solutions Act of 2006 (AB32), requiring California take measures to reduce its carbon emissions to 1990 levels by 2020 (approximately 25% from current levels). California’s ambitious plans to reduce global warming have prompted counties and cities across the state to explore ways to reduce the impact of carbon emissions upon their communities. One important vehicle for achieving this goal is the development and adoption of green building ordinances (as either additions or amendments to the existing building codes) by local governments.

In order to understand the extent and nature of green building ordinances, Navigant Consulting conducted a study of California cities and counties with building ordinances. The objectives of this study were to establish:

• The number of cities and counties with green building ordinances,

• The extent of minimum requirements for real estate owners and developers to comply with the green building ordinances, and

• The motivations and concerns of key stakeholders and how these may be mitigated.
Building codes at the local government level generally specify and enforce the minimum building standard codes (incorporating local and state standards) for commercial (office, industrial, retail) and residential projects within the city or county’s jurisdiction. Recently, green building ordinances, usually applied via city resolution, have been enacted to address resource efficiency and sustainable development/construction practices. These green building ordinances must also incorporate state-based building codes pertaining to energy-efficiency (Title 24, California State Energy Regulations).

**Adoption Rate**

We reviewed the building ordinances of the 58 counties in California and found that 12 counties or 21% had some form of green building ordinance either approved or in development. Of the 54 Californian cities that we reviewed, 36 cities have established mandatory green building ordinances. A further 18 had either voluntary or in-development ordinance proposals.

**Note:** A listing of counties and cities with such ordinances, their qualifying criteria and minimum standards are provided in Attachment A, “California County-based Green Building Ordinances” and Attachment B, “California City-based Green Building Ordinances”.

**Minimum Qualifying Criteria and Standards**

For **commercial buildings** (office, retail, industrial), the general minimum standard mandated by at least 13 cities is the “LEED® certified” designation64. This standard is required in both large cities such as Los Angeles (projects over 50,000 square feet) and smaller cities such as Rohnert Park in Sonoma County (projects over 1,000 square feet). The City of Albany is the most ambitious, requiring projects over 5,000 square feet to achieve a LEED® Gold certification (refer Exhibit 1).

Several cities such as Berkeley and Sonoma have adopted **alternative rating/assessment systems**. In particular, Berkeley adopted its Commercial Energy Conservation Ordinance (CECO) in 1994 for all new commercial, tenant improvement (TI) and at sale/transfer transactions. These systems require that commercial buildings achieve minimum standards via energy audit and prescriptive measures65.

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64 The “LEED® certified” designation is the minimum level generally required by the US Green Building Council for the issuance of a LEED® green building rating certification
65 City of Berkeley CECO Information - [http://www.ci.berkeley.ca.us/ContentDisplay.aspx?id=15474](http://www.ci.berkeley.ca.us/ContentDisplay.aspx?id=15474)
For residential buildings, the majority of cities stipulate a GreenPoints minimum of 50 points for new construction\(^6\). This standard is common to both large cities (such as San Francisco, for projects submitted in 2010-2011) and smaller cities (such as Livermore in Alameda County). Several cities, however, require a higher target threshold (such as the City of Rohnert Park, requiring that projects over 500 square feet meet a GreenPoints target of 90 points) or additional prescriptive measures (for example, residential building projects in the City of Cotati in Sonoma County must achieve a minimum 60 GreenPoints and meet prescriptive requirements such as pre-plumbing for solar hot water) - refer Exhibit 2.

Several cities have implemented *alternative residential rating systems* and compliance requirements beyond the generally accepted GreenPoints system. These include prescriptive measures (such as building and construction waste reduction targets in the City of La Mesa, San Diego County) and requirements to meet and exceed Title 24 provisions of the California Building Code (such as the City of Santa Monica).

\(^6\) GreenPoints is a green building rating tool for residential projects. Developed by the non-profit Build-it-Green Group, GreenPoints is modeled closely to the LEED® rating system, focusing on Energy, Indoor Air Quality/Health, Resources and Materials, and Water. See website: [www.builditgreen.org](http://www.builditgreen.org).
Several cities have established **tiered compliance standards**, based on either the size of the project, the project value, or phasing of increased stringency over time:

- **The City and County of San Francisco** incorporates increased LEED® (for commercial building projects) rating requirements based on building/TI size and date of project – beginning at LEED® certified for projects up to 25,000 square feet. Projects over 25,000 square feet must achieve a minimum LEED® Silver from 2009-2011 and LEED® Gold from 2012 onwards.

- **The City of Hayward in Alameda County** requires commercial projects with a value over $3 million to seek LEED® Silver certification.

Tiered compliance standards help the industry adapt and respond to new building codes over time. It is the intent that industry adapts to the standards as they become accepted practice.

**Incentives**

Exhibit 3 details **financial** and **non-financial incentives** available to developers who choose to go beyond the minimum mandatory provisions or voluntarily adopt measures for their projects. Non-financial incentives such as an expedited approval process are commonly offered by cities with both mandatory and voluntary ordinances, such as the City of Santa Barbara (mandatory) and the City of Anaheim in Orange County (voluntary).

Many cities are currently offering **fee waivers** and **certification fee reimbursements** for residential projects. The City and County of San Francisco offers development related incentives
including 10% Floor Area Ratio/Height Bonuses for commercial building projects that achieve LEED® Gold certification (from where the mandatory requirement is LEED® Silver certification).

Several types of green building incentives are utilized. Explanations of each are below.

- **Floor Area Ratio/Height Bonuses.** A form of density bonus that rewards developments that exceed minimum ordinance requirements. This type of indirect financial incentive improves the financial feasibility of a project during the development process by allowing increased commercial leasable area.

- **Expedited permit review and approval** process gives preference to green building development planning submissions, thereby reducing entitlement times and development holding costs.

- **Full or partial reimbursement** of development application fees.

- **Reduced compliance scope.** Should a developer agree to implement certain green building standards beyond the minimum requirements, a city’s building department may reduce documentation or certification requirements, in lieu of third-party documentation sources. This has the benefit of reducing the need to provide additional documentation and compliance requirements For example; the City of Pleasanton
(Alameda County) offers a reduced compliance scope for commercial building projects that go beyond LEED® certification by registering for LEED® Silver and above.

- **City-based rebates.** These are financial rebates offered to projects that exceed minimum green ordinance requirements.

**Year of Implementation**

Most city green building ordinances were introduced and adopted into the municipal codes during the past 2 years. From 2007-2009 (April, 2009), there were 23, or 68% of all city green building ordinances passed in that time (refer Exhibit 4).

Early adopters, such as Berkeley (residential 1985, commercial 1994) and Pleasanton (2003) report that the integration of green building ordinances into the City’s building codes was relatively successful and accepted within the development process. The City of Berkeley’s Building Department reported that it is currently examining additional standards including incorporating elements of GreenPoints for residential and LEED® for commercial projects67.

The Building Department at the City of Novato in Marin County (which adopted a green building ordinance in October 2005) indicated that outreach and awareness programs have helped ensure its green building ordinance and requirements (minimum 50 GreenPoints for residential projects) have been well received68.

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67 Telephone Conversation, Building Department. City of Berkeley, Alameda County 03/16/2009
68 Telephone Conversation, Building Department. City of Novato, Marin County 03/16/2009
Stakeholder Motivations and Potential Barriers

Recent debate on green buildings and the key argument of cost versus benefit have brought about different viewpoints from various stakeholders involved in the real estate development process. An outline of the key stakeholders and their motivations and concerns around green building ordinances are described in the table below. Key points to note are as follows:

- There is concern from all stakeholders about the burden of cost of regulating, monitoring and implementing new requirements.
- There is also concern on the part of the building industry that governments may use developer levies (such as Senate Bill 1473) to secure additional fees from builders.
- The benefits to end users (tenants, residents) may not be fully apparent.
- There is clearly a role for utility companies and other interested parties to promote the convergence of standards, promotion of incentives and provision of information to help state and local governments achieve their climate change and green building objectives.
<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Key motivations for support</th>
<th>Key issues/concerns/obstacles</th>
<th>Solutions</th>
</tr>
</thead>
</table>
| County/City Government         | ▪ Demonstrating leadership in reducing carbon emissions at local government level directly (green building codes) and indirectly (pollution reduction/energy conservation)  
▪ Promoting economic development via improving building quality and standards in county/city | ▪ Administrative and cost burden of additional resources required to manage plan review and checking  
▪ Difficulty reaching consensus on uniformity of green building ordinances  
▪ Being viewed as anti-development and/or business | ▪ Identify and address the needs of all stakeholders. A comprehensive process that involves a large amount of stakeholder input and facilitation  
▪ The recently-passed S.B. 1473 (requiring collection of development levy) may alleviate concerns from counties and cities about additional cost of resources |
| Real Estate Owner/Developer    | ▪ Operational cost savings  
▪ Future-proofing/property asset  
▪ Improve the appeal of real estate space to tenants  
▪ Command a higher sale value, as opposed to a conventional "non-green" building  
▪ Increased publicity as result of going green  
▪ Translates to competitive advantages | ▪ Added "first costs" of meeting compliance or building green remains  
▪ Burden of additional documentation requirements for compliance purposes  
▪ Technical risk of green technology implementation to project | ▪ Financial and non-financial based incentives are available  
▪ Reduced documentation requirements from regulators/agencies  
▪ Comprehensive education and training programs in place in most cities to raise awareness.  
▪ Phasing in ordinance requirements over time to ensure the market/industry can adapt to changing requirements |
| Tenants                        | ▪ Demand-side motivation for green commercial space  
▪ Increasing accountability by internal and external stakeholders for corporate social responsibility | ▪ Green Leasing issues (lack of control on tenant improvement (TI) design and build-out decisions)  
▪ Lack of information and awareness around green building technologies  
▪ Changing regulations can impact TI intentions/plans  
▪ Perceived additional cost of green space | ▪ "Demystifying green" - facilitating awareness of green technologies  
▪ Consistency and certainty for phased approaches to green building ordinances |
| Utilities                      | ▪ California State Government mandate  
▪ Utility motivation to reduce carbon emissions  
▪ Increased scrutiny/pressure/accountability from external stakeholders to reduce carbon emissions | ▪ Assessing whether green building ordinances will have an long term impact to the carbon reducing aims of utilities | ▪ Monetary grants and funds from regulator to encourage implementation of education and awareness programs to utility customers  
▪ Assistance and awareness programs established by utilities to help customers reduce their energy usage  
▪ Lobbying and advocating consistency/integration of green building ordinances for first market adoption |
| Residents/Homeowner            | ▪ Operational cost savings over time  
▪ Opt-in to 'green-home' financing  
▪ Improved health and amenity | ▪ Added cost of meeting compliance or building green remains  
▪ Burden of additional documentation requirements for compliance purposes  
▪ Lack of willingness to pay | ▪ Financial and non-financial based incentives are available  
▪ Reduced documentation requirements from regulators/agencies  
▪ Improved value of dwelling over comparable conventional dwelling |
Rating Systems, Legislation and Impacts on California’s Greenhouse Gas Reduction Targets

California has introduced significant legislative instruments to help meet its ambitious greenhouse gas reduction goals. The Global Warming Solutions Act (2006) aims for a statewide reduction in greenhouse gas emissions while building codes such as the recently enacted Green Building Standards Code (an addition to the California Building Standards Code ‘CalGreen’, also called Title 24) aims to limit the impact that buildings have on carbon emissions through measures that reduce energy use in buildings.

California counties and cities are taking a proactive role in how current and future real estate development in their jurisdictions impacts the community and the environment. This is evident in green building codes that specify environmental standards that buildings should achieve. Our analysis of green building codes indicates the majority of California counties and cities have adopted standards that are comprised of building rating systems developed by third-party organizations including:

- **LEED®** developed by the US Green Building Council; and
- **GreenPoints**, a residential based rating tool developed by a California non-profit organization, Build-It-Green.

The **CalGreen** Code, developed by the California Building Commission, will be integrated into the State’s building code-**Title 24**. It will become effective on a voluntary basis beginning August 1, 2009, and a revised edition will become mandatory in late 2010 or early 2011. The code provides an extension to current state-wide requirements in existence (under Title 24) and allows counties and cities to apply additional requirements or specify higher green building targets. For example, the City of Palm Desert (Riverside County) requires residential homes to exceed Title 24 between 10-15% depending on the size of the home.

Other prominent rating tools such as the EPA’s ENERGY STAR® are tailored to existing commercial buildings. It is important to note the relationship that ENERGY STAR® has on the CalGreen code, LEED® and GreenPoints. Provisions established in the CalGreen Code calls for a 15% reduction in energy consumption relative to California’s existing building codes. By achieving this, such a building would also achieve an ENERGY STAR® certification. Achieving this designation would also assist in meeting minimum requirements for LEED® certification (although it would need to satisfy additional requirements to meet LEED® Silver and above).

Overall, the intent of the legislative requirements, building codes and rating systems is consistent: to ensure new buildings and renovations/retrofits achieve energy use reductions that ultimately reduce California’s greenhouse gas emissions.
The table below summarizes the focus and energy-reduction claims of each system.

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<th>Rating System/Legislation</th>
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</thead>
<tbody>
<tr>
<td>ENERGY STAR® (commercial buildings)</td>
<td>Commercial buildings</td>
<td>25%69</td>
</tr>
<tr>
<td>CalGreen Code (commercial and residential)</td>
<td>Residential and Commercial</td>
<td>15%70</td>
</tr>
<tr>
<td>GreenPoints (residential)</td>
<td>Residential</td>
<td>15% from base California Energy Code71</td>
</tr>
<tr>
<td>LEED® (commercial and residential)</td>
<td>Primarily commercial, with recent addition of ‘LEED® Homes’</td>
<td>25-30% (LEED® Certified) 34% (LEED® Silver) Approximately 50% (LEED® Gold/Platinum)72</td>
</tr>
</tbody>
</table>

The following tables outline the most common minimum green building requirements of each rating system or code.

For commercial buildings, the CalGreen code is clearly focused on energy efficiency and shares many of the requirements enshrined in the other rating systems. The code also requires water efficiency and recycling measures. However, CalGreen does not include significant requirements in the areas of air quality, use of sustainable building materials or site related standards, such as storm water retention or transit requirements.

For residential buildings, the CalGreen code exceeds the GreenPoints residential standards in energy efficiency but is again less onerous in air quality.

69 Source: ENERGY STAR®
70 Source: California Building Commission
71 Source: Build-It-Green
Energy characteristics of green *commercial buildings* with green building related certification(s)

<table>
<thead>
<tr>
<th>Description of green building feature</th>
<th>ES</th>
<th>Cal</th>
<th>LEED-C</th>
<th>LEED-S</th>
<th>LEED-G</th>
<th>LEED-P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy-efficient appliances</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Solar and renewable-energy incorporation</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Purchase or incorporation of Green-power</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Energy-efficient lighting</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Lighting controls (motion sensors)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Energy performance of buildings (meeting minimum ASHRAE 90.1 standard)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Non use of CFC refrigerants in HVAC and mechanical systems</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Thermal comfort (incorporating user controls such as user-operable windows/shades)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Commissioning of major energy use systems (eg, HVAC and mechanical)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Efficient HVAC systems (air handling units and gas fired chillers)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Thermal comfort (incorporating insulation)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>On-site renewable energy generation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>
Non-energy characteristics of *green commercial buildings* with green building related certification(s)

<table>
<thead>
<tr>
<th>Description of green building feature</th>
<th>ES</th>
<th>Cal</th>
<th>LEED-C</th>
<th>LEED-S</th>
<th>LEED-G</th>
<th>LEED-P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage and collection of recyclables</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Design and building/site considerations</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Water-efficient appliances and fittings</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Water efficient landscaping and irrigation</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Indoor air filters and humidity controls</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Carbon Dioxide (CO₂) monitoring</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Natural ventilation</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Acceptable indoor ventilation levels</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Prohibiting smoking within building (or provide a designated smoking area)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>High performance glazing (low-e, double glazing)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Adequate day lighting</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Sustainably sourced building materials and fittings</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Low Volatile Organic Compound (VOC) materials</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Erosion and sedimentation control plan</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Stormwater and on-site water controls</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Carpooling and bicycle spaces</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>On-site water recycling</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Incorporation of innovative and emerging sustainable building technologies</td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

**Key:** (ES-ENERGY STAR®), (Cal-CalGreen Building Code Addition), (LEED®-C: Certified), (LEED®-S: Silver), (LEED®-G: Gold), (LEED®-P: Platinum)
Energy characteristics of *green residential buildings* with green building related certification(s)

<table>
<thead>
<tr>
<th>Description of green building feature</th>
<th>GP</th>
<th>Cal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy-efficient appliances</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Solar and renewable-energy incorporation</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Purchase or incorporation of Green-power</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Energy-efficient lighting</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Lighting controls (motion sensors)</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Energy performance of buildings (meeting minimum ASHRAE 90.1 standard)</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Thermal comfort (incorporating user controls such as user-operable windows/shades)</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Efficient air-conditioning systems or ceiling fans</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Thermal comfort (incorporating insulation)</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

Non-energy characteristics of *green residential buildings* with green building related certification(s)

<table>
<thead>
<tr>
<th>Description of green building feature</th>
<th>GP</th>
<th>Cal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction/occupancy waste minimization and recycling</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Design and building/site considerations</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Water-efficient appliances and fittings</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Water efficient landscaping and irrigation</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Indoor air filters and humidity controls</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Carbon Dioxide (CO₂) monitoring</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Natural ventilation</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>High performance glazing (low-e, double glazing)</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Erosion and sedimentation control plan</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Homeowner/tenant manuals and guides</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

**Key:** (GP-GreenPoints), (Cal-CalGreen Building Code Addition)
Carbon savings of green office buildings versus overall office building stock

The following provides an indicative analysis of the potential impact of a mandatory building code on energy efficiency and greenhouse gasses in commercial office buildings California. As of April 2009, there were approximately 66,000 office buildings (Class A, B, and C) in California with a total size of 1.3 billion square feet of space73. Approximately 13% of these buildings are currently “green” (defined as having ENERGY STAR® and/or LEED® certification).

According to the DOE, the average Californian office building generates approximately 20 pounds of CO2 per square foot annually. For the purposes of this analysis it is assumed that green buildings are 20% more efficient than the average building, and therefore produce 20% less CO2. Therefore the total CO2 emissions generated by all office buildings in California are estimated at 13.0 million tons74.

<table>
<thead>
<tr>
<th>2009</th>
<th>Green</th>
<th>Non-Green</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Office Buildings</td>
<td>8,580</td>
<td>57,420</td>
<td>66,000</td>
</tr>
<tr>
<td>CO2 per Sq.ft</td>
<td>16.0</td>
<td>20.0</td>
<td>19.5</td>
</tr>
<tr>
<td>Total CO2 (Tons)</td>
<td>1,381,589</td>
<td>11,557,521</td>
<td>12,939,109</td>
</tr>
</tbody>
</table>

Projecting these numbers forward to the year 2020, we can assess the impact on CO2 emissions of the introduction of a mandatory building code. Our analysis assumes that the building stock increases by 0.5% per annum, that 100% of new buildings are green, and that the existing non-green buildings are subject to a major retrofit every 15 years, at which point they are retrofitted to green standards.

Consequently, by 2020, 87% of commercial office buildings are green. Total CO2 emissions are assumed to have fallen to almost 11.6 million tons, a decrease of 1.4 million tons or 10.5% over 2009, despite a 5.5% increase in the total number of buildings over this time period.

<table>
<thead>
<tr>
<th>2020</th>
<th>Green</th>
<th>Non-Green</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Office Buildings</td>
<td>60,610</td>
<td>9,020</td>
<td>69,630</td>
</tr>
<tr>
<td>CO2 per Sq.ft</td>
<td>16.0</td>
<td>20.0</td>
<td>16.5</td>
</tr>
<tr>
<td>Total CO2 (Tons)</td>
<td>9,759,684</td>
<td>1,815,549</td>
<td>11,575,233</td>
</tr>
</tbody>
</table>

While it is likely that the adoption of green building practices will continue to grow in the absence of a mandatory code, the impact of requiring 100% compliance will accelerate this process and bring the stock of buildings closer in line with the state’s 2020 GHG reduction goals.

73 Source: CoStar Market Data, April 2009
74 Green office space multiplied by a factor of 20 pounds of CO2 per square feet (Source: ENERGY STAR®). This is then converted to tons (2000 lbs = 1 ton).

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