



E3 CA INC

A Guide to Development Risk Management through Energy Planning in California

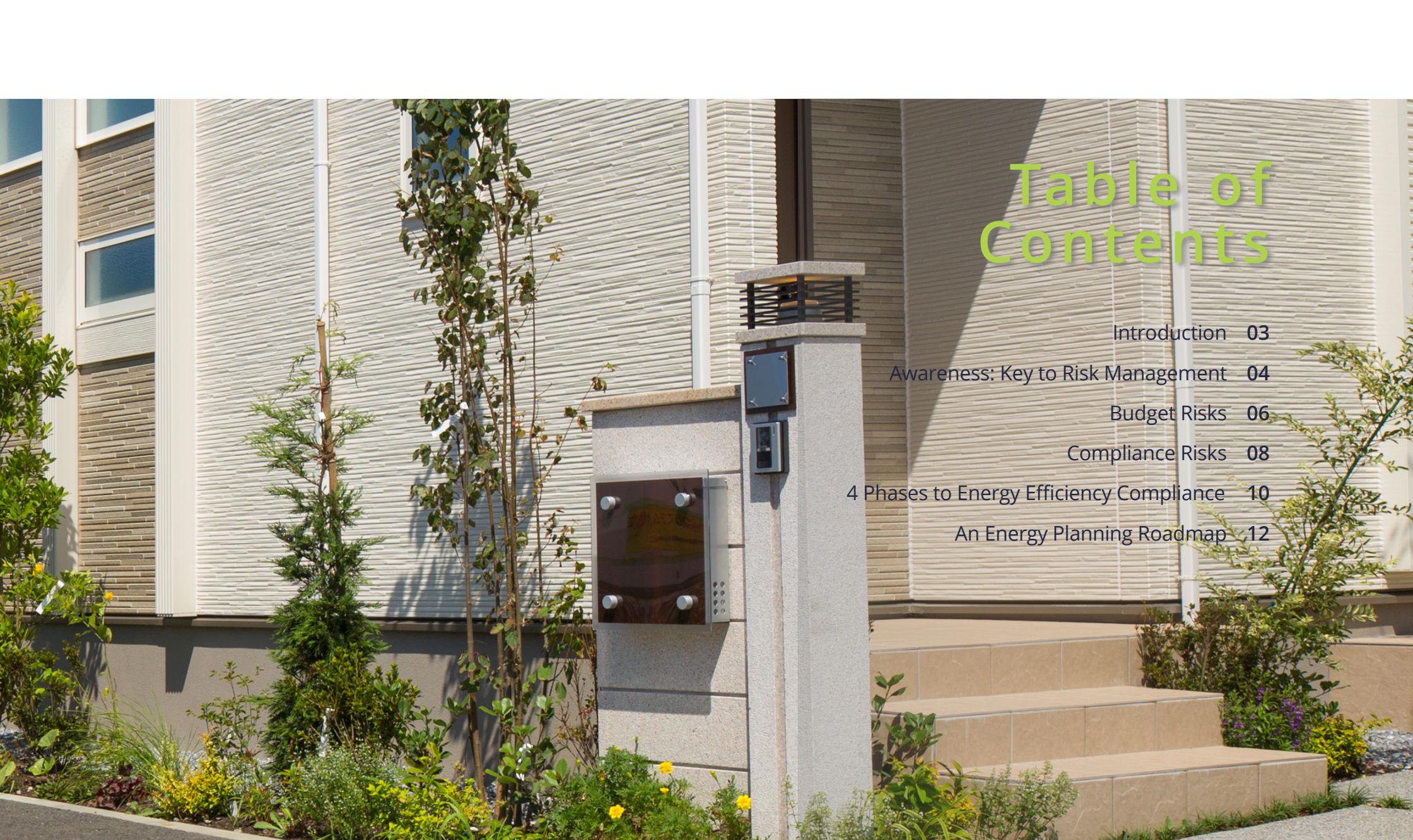


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Introduction

01 California is home to a fairly complex and advanced energy saving policy which influences the way we move around, the type of houses and buildings we occupy, the myriad of top-notch mechanical equipment that have become part of our daily lives, and even the impact we have on the environment. As with any set of regulations, **the California Building Energy Efficiency Standards** (often referred to as Title 24 Code) is a framework for compliance for new construction and rehabilitation. Recent code changes open the possibility for architects, engineers and developers to make mistakes that, if go undetected, can become costly risks for a development project.

At E3 California, we believe

in the importance of sharing our experience based on the notion that energy planning integrated into to every development stage project, is the best tool to both minimize and avoid compliance risks.



The costs associated with the various risks and how to avoid and / or manage them, is the main focus of **This eBook.**



We hope this short eBook will

spark a genuine interest in energy planning for efficiency and sustainability while providing a more solid knowledge base for our building industry partners.

Awareness:

02 Key to Risk Management

The definition of “project” is “a collaborative enterprise that is carefully planned and designed to achieve a particular result”.

In simple terms - a complex endeavor with many moving parts.

Each project requires searching for optimal ways to accomplish milestones, while being aware of the risks and deviations that could derail them and potentially inflict monetary loss and timeline deviation, both of which can be devastating for any project.





Real estate development projects are no different.

Given their nature and scope, the risks and errors can be devastatingly costly to both communities and businesses reaching far beyond the impact of one particular investor.

One critical area for awareness is the **California Building Energy Efficiency Standards** (Title 24 Code), which is without doubt, a very advanced and complex policy set that updates every three years.

- ▶ How can you, as a developer or architect, avoid falling into this situation?
- ▶ How can you make sure that your project meets or exceeds current code requirements and are spared from expensive modifications, delays, failed inspections or potential damage reparation?



Mistakes made in energy efficiency planning will become costly burdens later during construction and forever after for residents as they consume both electricity and gas to maximize the comfort inside home.



The answer is simple: Awareness.

- Awareness of the risks associated with your development project.
- Awareness of current building code requirements, and
- Awareness from project inception is the best and most cost-effective approach.

Budget Risks

03

Budget management -aka “scope creep”- is one of the major challenges faced by developers and builders.

Losses will arise, re-work will be done, but above all, the financial impact could be so great that even with value engineering, the damage might be irreversible, and a once viable project could fall flat before any single hammer is swung.

- ▶ **Let’s imagine you begin working on a new development and most of the “typical” success variables are in place.**

Community buy-in, land use approvals, feasibility studies, suppliers, sub-contractors and the fundamental economics of the project are all under control.

Projects in California are also required to demonstrate energy efficiency compliance (**Title 24**) when submitting plans to the local building department.



To avoid delays and cost overruns, developers and architects need to incorporate **Title 24** compliance early for every new construction, rehabilitation and adaptive reuse project.

When addressed during the design phase, the energy consultant can use energy modeling software to determine the most cost-effective solutions and support various above code energy efficiency designations (LEED, Build It Green, etc.) with minimal disruption to the project.

Compliance Risks

04 **Title 24** should be embedded in the way we design, build and live in California. What could be seen as highly technical details for high-performance multifamily and commercial buildings, is actually a viable and comprehensive set of energy efficiency requirements all across the state.



Energy compliance, however, does not happen automatically. Architects must incorporate specific features, equipment and systems into their designs. Then building department officials will review and approve the submitted construction documents with vigilance to flag potential code violations and send them back with plan check comments for recalculation. Each plan check comment must be addressed by the architect and the re-modeled for energy compliance.



How can such a situation be avoided?

Engage an energy consultant early in the design phase of every new construction, rehabilitation or adaptive reuse project. A California Association of Building Energy Consultants (CABEC) energy consultant whom is credentialed in the current code cycle regulations has thorough knowledge and deep understanding of California's current energy efficiency standards for different types of projects.

A credentialed and experienced energy consultant can provide systematic review of the requirements the project must meet and provide cost-effective energy efficiency options for review.

Unanticipated design changes will likely increase project costs.

Additionally, during and post-construction inspections and verifications will be required to ensure code and safety compliance.

4 Phases 05 to Energy Efficiency Compliance

Embracing an energy compliance approach from the start will ensure that risks are minimized.

This approach can be best seen as a succession of four phases:



1. Early Energy Planning: From the pre-design and the schematic phases, all the way through the construction document and plan set preparation phase, your project team needs to be ever aware of the California Title 24 requirements.



2. Early Energy Modeling: Using energy compliance software at very early stages of design can provide the project team with various energy options for consideration and determine which options are the most cost-effective and in alignment with the project philosophy, vision and goals.



3. Construction: Title 24 compliance documents will serve as a guide throughout construction to demonstrate required testing, inspections and/or verifications required along the way.



4. Final Inspection: Completed inspections and verifications of the required energy efficiency measures will yield the documents needed by the building department and updated in the HERS registry (CalCERTS or CHEERS) to secure occupancy permits.





An Energy

06 Planning Roadmap

The California Building Energy Efficiency Standards place development projects on the front line of the State's environmental and energy conservation efforts.

For architects and developers, it can be a labyrinth of challenges likely to slow a project's progress when not considered early.

An energy planning roadmap can demonstrate the optimal path to achieve the most effective outcomes and determine which documents are required and what kind

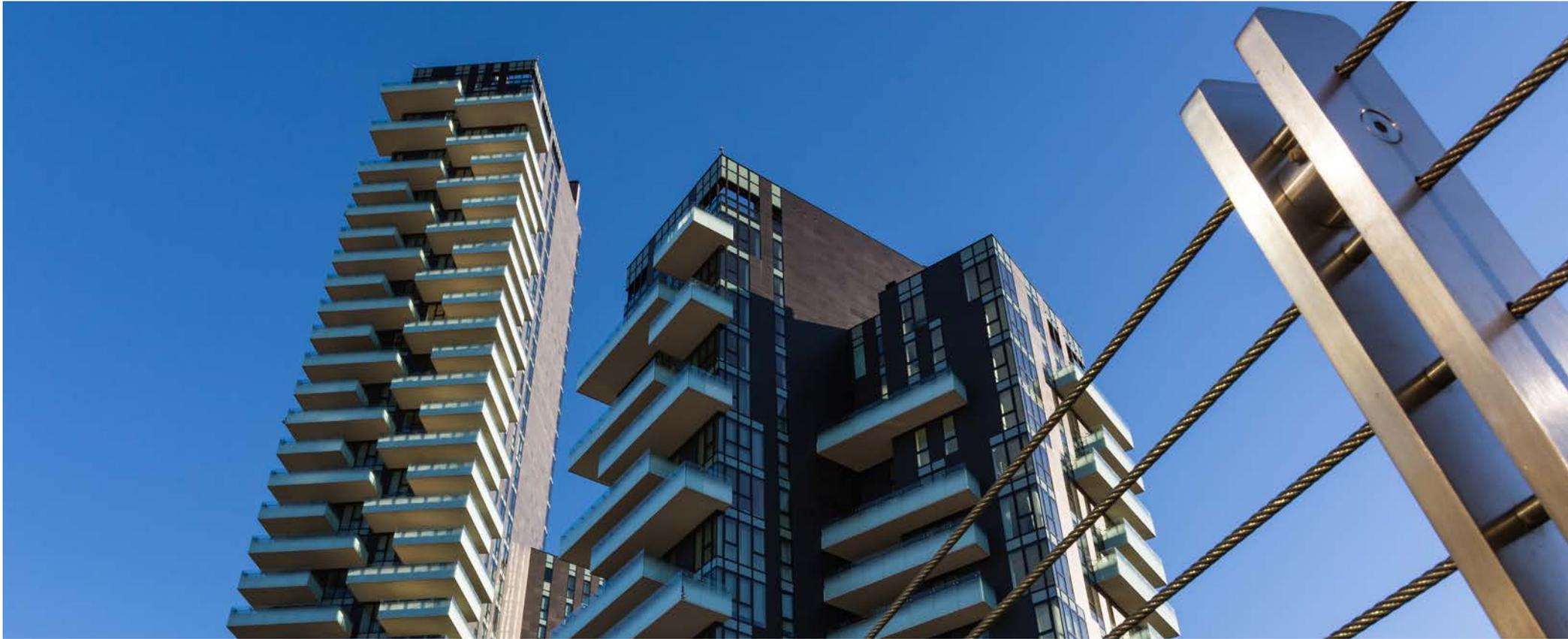
of analysis is expected before submitting for a building permit or securing the occupancy permit.

Although complex, the code is completely coherent and one step closer to Zero Net Energy consumption. With the help of an **expert energy consultant**, your team can capitalize on experience to ensure that all key players in the design process are on the same page, developing an energy roadmap for your project as a team.



About E3 California

E3 CA has been providing Energy Consulting and Verification Services since 2007.



We are a full-service consulting and third-party verification firm specialized in multifamily and mixed-use developments in both the affordable and market-rate sectors.

Our goal is to help our clients create buildings that are not only healthy for the environment but also healthy for those who live and work inside them.



E3 CA INC

We support architects and developers in the design and creation of new energy-efficient buildings and sustainable energy-related renovation of existing buildings of any type and size.



Tommy Young
CEO

We support implementation of provisions from California Energy Code by consulting and offering practical guidance, providing documented energy certification.

We Were Built for Compliance and are committed to be your best-in-class partner as we champion for the environment, sustainability and community.

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