

GEEA[®]

Green Energy

and

Efficiency Audit[®]

1. Goldman & Partners – ABOUT US

Goldman & Partners is a sustainable design and consulting service company whose operations span across the national territory and in all the areas where sustainability is an issue, supporting their growth and development through the provision of comprehensive analytical and design solutions.

Each project is supervised by flexible and cross-disciplinary ad hoc teams created according to specific client needs and made up of high-skilled professionals.

All the partners of **Goldman & Partners** operate in Italian and foreign universities on a regular basis, as well as in technologically advanced institutions or think tanks. A long-standing preferential relation is in place with **INBAR, Istituto Nazionale di Bioarchitettura**, and with professionals related thereto across the national territory.

Goldman & Partners is also the editor of **MeglioPossibile.it**, the most comprehensive and reliable Italian web-based sustainability monitor implemented by scientific and communication professionals.

With its on-going research on all new sustainability-related economic, technical, and scientific issues in Italy and around the world carried out for the purpose of publishing **MeglioPossibile.it**, **Goldman & Partners** ensures that its clients receive the latest updates on all technologies available internationally and on the best professional figures on the market that could be included in their teams. Thus **Goldman & Partners** can ensure the best possible quality of the projects and activities carried out in favour of its clients.

With reference to the real estate sector, **Goldman & Partners** offers comprehensive evaluations of real estate sustainability (Real Estate Asset Value).

The main goal is maximum economic and environmental upgrading of the existing and future real estate assets of its clients. **Goldman & Partners** provides all the necessary services to implement sustainability in view of optimizing the economic value of assets based on the technical opportunities offered by the existing real estate assets.

The activities carried out by **Goldman & Partners** for the purpose include:

- **GEEA® - Green Energy and Efficiency Audit®**: a systematic process that provides reliable information on the whole set of costs produced by a building or group of buildings. The purpose is to identify and quantify – in terms of cost-effectiveness – all the saving opportunities offered by the ordinary and extraordinary management of a property, as well as any upgrading opportunities it may provide.

- **Building Engineering**: **Goldman & Partners** operates in the field of sustainable architecture and bioarchitecture with a comprehensive design and project management activity, combined with on-going Quality Control services applied both to design and to

implementation. The main goal is maximum economic and environmental upgrading of the existing and future real estate assets of its clients. **Goldmann & Partners** is a cross-disciplinary entity, designed to develop, organize, and monitor all the steps of the economic-financial project, as well as of the architectural and engineering one, including design, tenders, supervision of construction, testing, and interior layout definition.

- **Eco-layout:** one specialty of **Goldmann & Partners** is indoor space layout definition aimed at optimizing economic resources based on the available human capital and their well-being, as well as at maximizing the existing functional and business requirements. To this end **Goldmann & Partners** provides specific human resource training and support services whenever changes are made to corporate goals.

2. GEEA® - Green Energy and Efficiency Audit ®

It is a systematic procedure implemented to obtain **reliable information of the whole set of costs produced by a building or a group of buildings**. It may consider existing buildings or building projects of all kinds and for all purposes, including executive, industrial, commercial, health, sport, and private and/or public residential ones. The goal is to **identify and quantify – in terms of cost-effectiveness – all the saving opportunities** offered by the ordinary and extraordinary management of a property, as well as **any upgrading opportunities** it may provide.

The GEEA® - Green Energy and Efficiency Audit® **is thus a strategic tool that allows to decide:**

- **whether to participate** to the ordinary or extraordinary management of a building or a group of buildings
- to what extent
- when (including at a later stage)
- at what costs
- with what benefits

The benefits are always assessed in terms of:

- energy cost saving
- higher efficiency of the building
- reduction of management and maintenance costs
- usage rationalization
- wellbeing of users
- real estate upgrading

3. GEEA® – A unique tool on the market

The investigation elements characterizing and differentiating the GEEA® from the other energy audits available on the market include the detailed analysis of:

- all the areas in which the building produces costs for the owners and users: construction, energy, environmental, management, social;
- the criticalities of the enclosure/technical systems relation;
- the energy consumption profiles of the system under study;
- the possible measures to contain consumptions following – or in the absence of – refurbishments;
- the above measures according to a cost/benefit logic;
- all the ordinary maintenance cost items related to regular use, function location, environmental layout, material and people logistics, the nature of on-site systems and equipment;
- all the cost items resulting from cases of limited indoor comfort.

The analytical report that follows such investigations is a comprehensive tool that helps select the appropriate measures.

The main peculiarity of the GEEA®, by which it stands out among all the other audits available on the market, is that the GEEA® Preliminary Report is drafted at all stages of the analysis solely by senior professionals with at least a 30-year experience in sustainable design and complex yards.

It is not a standard audit, a result of software processing, but rather a true strategic paper.

EVERYTHING is solely entrusted to specialized experts – from inspections to investigations on the enclosure and systems, usage habits, layouts, economic-real estate potentials, and intervention priorities.

The conclusions of the GEEA® Preliminary Report include a list of practical guidelines, the result of painstaking team work involving each time the best professional figures available on the market that have been working in partnership with Goldman & Partners for many years.

4. **GEEA® GREEN ENERGY AND EFFICIENCY AUDIT® OPERATING LEVELS**

In addition to providing tools and methods to reduce energy consumptions, the **GEEA® - Green Energy and Efficiency Audit®** pursues a much more important goal: **contribute to the global improvement of a building in terms of economic efficiency, energy efficiency, and general sustainability**. It therefore defines a comprehensive methodological approach, more consistent with the present trends of best architectural design.

The **GEEA®** operates at three different levels:

1. GEEA® – 1st level – GEEA® Preliminary Report

An audit that can be performed **quickly, economically, and effectively by skilled auditors with significant background field experience**. This approach is preliminary to subsequent operating analyses and **allows to obtain a reliable overview of the criticalities/opportunities relevant to the property in terms of functional and energy efficiency**. When designing new buildings, this tool is used to evaluate the consistency and energy optimization of design decisions. It also **provides ideal support to the economic management of existing real estate portfolios**, particularly if these include buildings dedicated to specific sensitive functions (e.g. hospitals, clinics, sport facilities, homes for the elderly, nursery schools, industrial production), where maintenance is often forced to take place without interrupting operations, and where the priority of the maintenance plan is founded on the principle of maximum reduction of maintenance itself, as well as of an optimized cost/benefit ratio.

Additional levels (usually adopted in the design stage):

2. GEEA® – 2nd level

Defines a more comprehensive, more resource-intensive technical approach. Due to its peculiarities, it is **used to analyze and outline more closely any action opportunities identified in the 1st level audit**.

3. GEEA® – 3rd level

Provides for the **dynamic simulation of the building-system** as a whole. In this case a virtual model of the building is created and used as a basis to **check the efficacy of the strategies adopted** for the purpose of defining project details.

5. The structure of the GEEA®-Green Efficiency and Energy Audit®

PRELIMINARY REPORT

The GEEA® PRELIMINARY REPORT is the leanest and most effective single strategic instrument now available on the market.

It is a crucial tool to promote practical actions for general energy consumption rationalization and containment, as well as for reduction of management and maintenance costs in a building or infrastructure.

It records the efficiency of a building in energetic, architectural, and functional terms by investigating on its shape, bioclimatic location, orientation, composition of building systems – i.e. the elements of the enclosure that define limited spaces, energy behaviour, technical systems aimed at ensuring comfort – i.e. the psychophysical wellbeing of its residents, and the criteria for their use.

At the preliminary stage, it includes the following sections:

Status analysis: contains a brief report required to define the present status, highlighting any criticalities observed during the inspection.

Improvement of the cost budget: all the possible areas of intervention on individual expense items are listed to identify possible opportunities to reduce general management and maintenance costs.

Preliminary list of possible interventions: the measures suggested to contain energy and resource consumption, management and maintenance costs are listed, and a rough estimate of the required investments is provided.

Improvement of sustainability: contains a preliminary estimate of the possible sustainability levels that can be achieved with reference to the selected environmental certification protocol.

Increase of the real estate value: following the proposed interventions, the inputs are provided for appropriate evaluation of the increase of the real estate value.

Conclusions: contains a **brief and rough evaluation** of the elements highlighted by the Audit, stressing the criticalities and focusing on the proposed interventions that deserve further analysis. The conclusions confirm or deny the opportunity to implement measures, which and when, at what costs, and for what benefits.

6. GEEA®-Green Energy and Efficiency Audit® A SUSTAINABILITY AUDIT

The GEEA® - Green Energy and Efficiency Audit® Preliminary Report analyzes all the aspects that help create the Sustainability balance of a building. Sustainability means **the set of actions** characterizing the project in terms of economic and environmental efficiency. **All these actions increase the overall efficiency balance of the building and reduce its economic requirements significantly.**

The GEEA®- Green Energy and Efficiency Audit® Preliminary Report investigates the costs resulting from:

Environmental sustainability: the way in which the building/group of buildings relates with the rest of the reference region (urban and geographic location).

Social sustainability: the set of actions generated in the reference social community (public, health, sport, religious, commercial, industrial buildings) by the presence of a building.

Environmental sustainability: how the building/group of buildings relates with the reference environment, stressing the actions that may have an impact on it (employees, regular users, occasional users, visitors).

Anthropic sustainability: the monitoring of the project's impact on the psychophysical wellbeing of those that will live in the concerned indoor/outdoor environments.

Energy sustainability: the set of behaviours that a building system can generate to reduce and optimize its energy requirements following the adopted design solutions.

Management sustainability: the optimization of the activities and materials used to maintain the building system in the baseline efficiency and functional conditions.

Economic sustainability: the set of **primary and additional costs** considered to define the whole cost of the real estate transaction and its actual market value. Economic sustainability is the ultimate goal of any investment.

A project is viable if it can be self-funded and allows to ensure cost-effectiveness at all stages, otherwise its ability to generate an economic return for the investors would be thwarted.

LEED® CERTIFICATION

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The selected evaluation and certification system is LEED® (Leadership in Energy and Environmental Design), first published in 1998 in the United States and on April 14, 2010 in Italy. The LEED® system was developed by the U.S. Green Building Council (USGBC), a no-profit association established in 1993, which promotes and provides a **global approach to building sustainability**.

The LEED® system applies to the building sector by providing evaluation methods based on acknowledged energy and environmental principles, which strike a **balance between established practices and emerging concepts**.

In January 2008, GBC ITALIA was founded for the purpose of developing a version of the LEED® suited for Italy: **LEED® Italia Nuove Costruzioni e Ristrutturazioni**. This system specifies the requirements to build environmentally sustainable property, both in terms of energy – i.e. in economic terms – and of environmental resource consumption, as well as of the wellbeing of residents and of sustainability of the construction activity.

LEED® is the world's most popular system for certification of the environmental sustainability of buildings: it is a voluntary sustainability evaluation system, certified by a third-party Institution.

LEED® is a flexible and comprehensive system that provides for diversified formulas for the different types of interventions and usage destinations.

While LEED® evaluates the design phase, it also certifies the construction and management of high-performance sustainable buildings, promoting a system of **integrated design involving the entire property**.

Sociological surveys carried out in the United States have demonstrated that the good building practices implemented in the building yards that strive towards certification have a **positive impact on the population, both vis-à-vis the contractor and vis-à-vis the client**.

LEED® does not just evaluate the energy performance of the building, but also certifies its sustainability in terms of **indoor and outdoor environmental quality and impact of the construction on the surrounding eco-system**, as well as on the consumption of energy and environmental resources.

The system is made up of **a set of performance standards** for certification of the project and of the construction, divided into seven categories: Site Sustainability (SS), Water Management (WM), Energy & Atmosphere (EA), Materials & Resources (MR), Indoor environmental Quality (IQ), Design Innovation (DI), Regional Priority (RP). The evaluation system includes 8 mandatory prerequisites and credits that can be selected to obtain additional scores. The sum of the scores obtained results into the achieved certification

level, which certifies the performance of the building in terms of environmental sustainability.

The LEED® NC certification provides for **score brackets: Base 40-49 points; Silver 50-59 points; Gold 60-69 points; Platinum over 80 points.** The final score is obtained if the requirements of the different credits of the evaluation system are met. The achieved sustainability level is announced on a **plate applied to the outside of the building upon obtaining the certification, thus bearing evidence of a conscious environmental sustainability approach** that results from improved design, building, and operating practices compared to the customary ones.

All this has a positive impact in terms of image of all the stakeholders participating to the activity.

Statistical surveys on certified buildings point out to **economic savings** in terms of reduced energy consumption and lower management and maintenance costs, **high well-being and productivity** of residents, and a **significantly higher value** of the property. A project implemented according to environmental sustainability criteria is usually positioned at **the highest end of the reference building market.**

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