



INTERNATIONAL ASSOCIATION OF YOUNG LAWYERS

Green Buildings – From Buckminster Fuller to Norman Foster

**Commissions in charge of the Workshop:
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GENERAL REPORT

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Green Buildings – From Buckminster Fuller to Norman Foster

Buckminster Fuller was ahead of his time. He believed human societies would soon rely mainly on renewable sources of energy. Is his vision about to become true in the real estate business? How widespread is the concept of green building (or sustainable building) across the globe? For sure, stakeholders of many kinds are involved: architects, engineers, landlords and tenants, governments, lawyers and – not the least – investors. This General Report was drafted upon the input from a relatively small sample of National Reporters from Europe and South America. It shall however serve as a good base for broader discussions at our workshop on this topic at the AIJA Munich 2016 annual Congress. The aim of this General Report is to enlighten its readers of how different countries have adopted the approach of “green building” from a legal point of view, the term “green building itself” being an almost mythical term.

The upcoming workshop will start with a visionary media presentation, to set the participants into the concept. We will then examine the eco-life cycle of green buildings (from design, construction, operation, maintenance, renovation, to demolition), recognise the long term economic benefits, and discuss the legal and contractual aspects related thereto, including those of public procurement (regarding, for instance, schools, hospitals or airports), an issue which is not covered by the national reports.

1. National Reports

15 AIJA-Members volunteered to submit a National Report. Unfortunately, only six of them finally submitted one, in spite of several reminders. Some withdrew for work-related or personal reasons.

Hence, this General Report is based on National Reports from Argentina, the United Kingdom, Czech Republic, Poland, Germany and Spain, with some inputs from the Swiss and Swedish General Reporters. The National Reporters are experienced real estate and private/public construction law lawyers (around 10 years of experience), who advise clients, conduct transactions and litigate on their behalf.

The questions that the national reporters were asked to answer where:

- How do you define Green Buildings in your jurisdiction?
- Can you shortly describe the development within the last decades? What percentage of new construction qualifies as green buildings?
- Are there national and/or local objectives with regard to green building?
- Please describe the applicable green buildings standards in your country (insulation, efficiency, water and electricity consumption, waste reduction and recycling, sustainable materials, sustainable alterations and replacement of equipment, management of the building, global environmental impact...).

- Is there a certification for green buildings in your jurisdiction? What is the process?
- Are there differences for residential and non-residential (e.g. hotels, office buildings, schools/hospitals, industry) buildings?
- Does it cost more to build a green building?
- Are there any public financial incentives (subsidies) for green construction?
- Does green construction give any advantage in the permit process (faster process, exceptions such as higher utilisation etc.)? Or are there even obligations (stick and carrot)?
- Do green buildings offer other advantages (such as long-term economic benefits, better chances on the market, higher rent, public image...)?
- Can you think of contractual issues on green building (in contracts between owners/developers and design professionals and general contractors, in lease agreements, in hotel-management contracts...)? Do you have any recommendations to make such clauses effective?
- Do you have an example of litigation in relation with green buildings (e.g. water performance issues for the project owner/the design professional/the prime contractor, and third-party claims)?
- Do you want to tell us a personal story or achievement in relation to green buildings?

2. Definition of Green Buildings

Our reporters wrote that there is no legal definition of Green Buildings in their jurisdiction. However, for all of them, green buildings are understood as **energy-efficient buildings, which use energy from renewable sources**.

In the UK, the current government has formed targets based upon buildings being classified as zero carbon. A zero carbon building is one which has zero net emissions of carbon dioxide from all energy use over the course of a year (including energy used to provide electricity and heat to cool the building).

As our German Reporter correctly points it out, there is a distinction to draw between the terms of “green buildings” and “sustainable building”. The **concept of sustainable construction goes beyond green building**. Sustainable construction is more comprehensive and besides referring to the environmental aspect (which is the focus for green, resource-efficient buildings); it also includes economic, social and process-related aspects.

“Characteristic of green buildings is a high resource efficiency in the fields of energy, water and material. Because of this, the adverse impact on the environment and human health can be reduced; anyway, the building sector is responsible for a high

consumption of land, energy and water, and thus also for the change of air and atmosphere. The approach of the green building extends to all phases of the building lifecycle: project development, planning, construction, operation, maintenance and disassembly. It is a cross-section range of various legal matters.” (from the German Report).

Whereas green buildings have not yet been regulated in Argentina, the Argentine Constitution provides, since its amendment of 1994, that all Argentine inhabitants have both the right to an undamaged environment and the duty to protect it. The national government sets minimum standards for the protection of the environment and the provinces and municipalities establish specific standards. There has been some isolated regulation that introduced green building concepts (efficient use of electricity, thermal conditioning required for the construction of new buildings, green roofs).

3. Recent developments

Argentina

Since 2008 foreign corporations, interested on setting up in the country, have shown interest in applying their local regulations in Argentina. Later, Argentine corporations participated too, as they wanted to anticipate to the advantages offered by the construction or rental of Green Buildings, and therefore creating a value-added product.

Most of the Green Buildings constructions in Argentina are commercial offices, as a consequence of the great speculation generated by the real estate market.¹

In December 2010 the percentage of LEED (acronym for Leadership in Energy & Environmental Design) registered projects was calculated according to the purpose of the building as follows: 78% commercial offices, 3% education, 3% laboratories, 3% hotels , 3% residential and 10% mixed uses (residential / hotel / office).

According to the USGBC (acronym for United States Green Building Council) Argentina’s Green Buildings constructions are 33 certificated projects, 23 of which are located in the Province of Buenos Aires, 5 are located in the City of Buenos Aires, 1 in the Province of Corrientes and 1 in the Province of Santa Fe²

United Kingdom

The Climate Change Act was introduced in the UK in 2008, creating a long-term, legally-binding framework for tackling climate change. It set a target of reducing carbon emissions by 80% compared to 1990 levels by 2050, with a reduction of at least 34% by 2020.

¹ From the Interview with architect Guillermo Bruzini from the Argentina Green Building Council, a NGO that operates under World Green Building Council licensee, performed on December 2015.

² <http://www.usgbc.org/projects?keys=argentina&=Search>

A strategy for how this was to be achieved was set out in The Carbon Plan published in December 2011. Buildings form a significant part of the plan as they account for around 45% of our total carbon emissions.

In December 2006, the Labour government committed that from 2016 all new homes would be 'zero carbon'. The Labour budget in 2008 announced the government's intention that all new non-domestic buildings should also be zero carbon from 2019. This commitment was confirmed by the Coalition government in December 2010.

Czech Republic

Green buildings are to become a standard in Czech Republic.

In the context of the implementation of Directive 2010/31/EU new buildings have to meet the requirements for nearly zero-energy buildings by 2020. Energy Management Act sets out a time frame for meeting this obligation. A building with nearly zero-energy consumption means a building with a very high-energy performance, the energy consumption of which is to a significant extent met from renewable sources.

Another component of this action plan is the long-term building renovation strategy.

Aside the legal regulation, plenty of private associations and movements are very active in this field. The most renowned among them is the Czech Green Building Council (CZGBC) which integrates companies and organizations from all sectors of the economy related to the real estate market and the construction industry and stimulates the market to transform methods of design, construction, renovation and operation of buildings and urban structures with the aim to create a healthy, prosperous, environmentally and socially friendly built environment that enhances the quality of life.

Poland

According to the data published by Colliers International, in 2015 there were 249 certified objects in Poland (126 in Warsaw, 26 in Cracow, 17 in Poznań, 12 in Wroclaw and 68 in other cities). 202 certificates were awarded on BREEAM system, and 47 were based on LEED standard. Comparing to 2014, it means an increase of 60% (in 2014 in Poland there was 152 certified buildings).

Germany

In 2008 133.666 building permits were issued for the construction of residential buildings nationwide. On the other hand, 17,950,185 residential buildings are in the portfolio. The significant CO₂ savings potential is demonstrated by the fact that many of the inventory residential buildings were built before the first legal regulations on the energy performance of buildings in 1977 came into effect. Because

of this, the newer standards are not met and the annual renovation rate is only about 1% of the existing buildings.

The share of the renewable energies used for heat generation rose from 2.1% in 1990 to 8.4% in 2009. In 2009, the biomass dominated with 86.6%, followed by 4.63% biogenic share of waste, 4.52% geothermal and solar thermal energy 4.3%.

Spain

In recent years, Spain has made great efforts to implement energy efficient policies aimed at eliminating the distance that has historically separated Spain from the average energy intensity of the European Union.

With regard to green buildings certified by LEED (see below under the chapter “Certification for Green Building”), Spain is positioned as the third European country after Germany and Sweden and the tenth country worldwide. In November 2015, the LEED programme exceeded the number of 280 registered projects.

Sweden

Green buildings have become more or less standard for most commercial building developments in Sweden, however according to the parties’ agreement. According to the Swedish Green Building Council, there are for the moment 948 certified building according to the local standard “Miljöbyggnad” or EU Green Building. The majority of these buildings are apartment buildings or office buildings.

4. National and/or local objectives with regard to green building

Argentina

There are no national regulations setting forth any matters other than those related to the use of energy. However, there are local objectives such as those targeted by the City of Buenos Aires with the Green Roofs Law and thermal conditioning in the Province of Buenos Aires.

EU

On EU-Level, the Member States have to comply with the objectives foreseen in the following European Directives (fully quoted from the Spanish National Report):

- 1) European Directive 2010/31/UE of the European Parliament and of The Council of 19 May 2010 on the energy performance of buildings. This directive promotes the improvement of the **energy performance of buildings** within

the Union, taking into account outdoor climatic and local conditions, as well as indoor climate requirements and cost-effectiveness.

Under this directive:

- energy performance certificates have to be included in all advertisements for the sale or rental of buildings
- EU countries must establish inspection schemes for heating and air conditioning systems or put in place measures with equivalent effect
- all new buildings must be nearly zero energy buildings by 31 December 2020 (public buildings by 31 December 2018)
- EU countries must set minimum energy performance requirements for new buildings, for the major renovation of buildings and for the replacement or retrofit of building elements (heating and cooling systems, roofs, walls, etc.)
- EU countries have to draw up lists of national financial measures to improve the energy efficiency of buildings

2) European Directive 2012/27/UE of the European Parliament and of The Council of 25 October 2012 on energy, efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC. This Directive **promotes energy efficiency** within the Union in order to ensure the achievement of the Union's 2020 20 % headline target on energy efficiency and to pave the way for further energy efficiency improvements beyond that date. To achieve this goal, the Directive establishes a common framework of measures and lays down rules designed to remove barriers in the energy market and overcome market failures that impede efficiency in the supply and use of energy, and provides for the establishment of indicative national energy efficiency targets for 2020.

Under the Energy Efficiency Directive new national measures have to ensure major energy savings for consumers and industry alike. For example:

- Energy distributors or retail energy sales companies have to achieve 1.5% energy savings per year through the implementation of energy efficiency measures
- EU countries can opt to achieve the same level of savings through other means such as improving the efficiency of heating systems, installing double glazed windows or insulating roofs
- The public sector in EU countries should purchase energy efficient buildings, products and services
- Every year, EU governments will carry out energy efficient renovations on at least 3% of the buildings they own and occupy by floor area
- Empowering energy consumers to better manage consumption. This includes easy and free access to data on consumption through individual metering
- National incentives for SMEs to undergo energy audits
- Large companies will make audits of their energy consumption to help them identify ways to reduce it.
- Monitoring efficiency levels in new energy generation capacities.
- EU countries must draw-up long-term national building renovation strategies, which can be included in their National Energy Efficiency Action Plans.

United Kingdom

The government has set targets, in England, for:

- All new homes to be zero carbon by 2016.
- All new non-domestic buildings to be zero carbon by 2019.

The government's developing policy on zero carbon homes is based on the following hierarchy:

- Make the fabric of the building energy efficient.
- Provide on-site low carbon heat and power.
- Use "allowable solutions" for residual carbon emissions

The zero carbon homes policy (particularly on allowable solutions) has been the subject of controversy and delay. Organisations such as the Zero Carbon Hub have published a number of reports and recommendations, seeking to inform the government's approach, and the government has published various statements and consultations.

In June 2014, the government confirmed that it is committed to implementing a zero carbon standard for new homes from 2016 and will set a minimum energy performance standard through the Building Regulations.

Czech Republic

The Czech Republic has strongly supported improvements in energy efficiency since 1989. It was quick to liberalize the energy market, delivering a major boost to enhanced energy efficiency.

The Czech Republic, in accordance with the Europe 2020 strategy, promotes the use of significant funding from the future multiannual financial framework for energy efficiency and support for business to help to ensure Europe's competitiveness.

The Czech Republic's national indicative target has been set at 47.94 PJ (13.32 TWh) of new final energy savings by 2020.

Germany

Efficient buildings are understood as an important tool for achieving the climate protection targets, since they have a significant potential for energy savings.

Cause of the extremely high percentage of the building area in the total energy consumption and massive CO₂ emissions is a poorly insulated and ill-equipped building portfolio. For this reason, it makes sense to bindingly regulate ambitious minimum energy requirements for the new construction of buildings and existing buildings. The construction sector is unquestionably of considerable importance in achieving the political climate protection targets (3x20 by 2020 at EU level). A corresponding frame at European level sets the buildings policy that was amended by Directive 2010/31 / EU in the year of 2010. In Germany, the directive is implemented by the Energy Conservation Code and the EnEV. The regulatory instruments of EnEV are flanked at national level through the promotion policy and the information strategy of the Federal Government.

Poland

Poland as a member of the European Union is obligated to implement the European standards.

In September 2012 the Polish Government adopted the National Development Strategy 2020 ("NDS"), which designates the most important tasks to achieve until 2020. One section of the NDS is dedicated to energy security and environment

protection. Document sets out target for development of distributed power engineering and relation of renewable sources in Polish production of energy mix. Similar targets have been set out in the Polish Energy Policy for 2030 (policy released by Ministry of Economy, contains national energy targets) and were implemented into Energy Efficiency Act from April 15, 2011. It proclaims a national target for efficient energy management, to be achieved by 2016. Target presupposes final energy savings in the amount of not less than 9% of the national average consumption of energy.

Spain

Spain as a member of the European Union is obligated to implement the European standards.

Sweden

Sweden, as a member of the European Union, is obligated to implement the European standards. This has been done.

5. Green building standards

Argentina

Locally, each Province has its own regulations and therefore their own standards. Some examples are the following:

- Province of Buenos Aires, Law that establishes the thermal conditioning required for the construction of new buildings, in accordance to IRAM (Spanish acronym for *Instituto de Racionalización de Materiales*) as a National Regulating Organism that develops technical rules which contribute to improve living standards, welfare and security for people and its goods. These regulations sponsor the rational use of resources, innovation and production.
- The Green Roof Law that provides for the implementing of green roofs in the City of Buenos Aires.
- Ordinance No. 8,757 of the City of Rosario, which incorporates guidelines for energy consumption and demand in constructions, one of the most significant aspects of the Green Buildings.
- Zero Waste Law No. 1,854 of the City of Buenos Aires, which establishes a management policy for household wastes, sets a progressive reduction of their final disposition and promotes their recycling.
- IRAM voluntary regulations which establish limits and rules applicable to sustainable buildings. These regulations promote the rational use of resources, innovation and production.

United Kingdom

The Code for Sustainable Homes that was introduced in 2007 sets out a series of sustainable building standards (including energy efficiency) against which all new homes in England need to be rated. Its principal objective is to ensure that the building industry constructs new homes that use energy, water and materials more efficiently. It also provides a benchmark by which developers can assess and differentiate themselves within the housing market.

The Code should be read in conjunction with the accompanying Technical Guide, which sets out the detail of what is required to meet the performance standards in the Code.

The Code for Sustainable Homes consists of six levels based on a star rating. Level 6 is equivalent to a zero carbon home.

The ratings are based on nine design categories:

- Energy and carbon dioxide emissions.
- Water.
- Materials (sustainable construction materials).
- Surface water run-off.
- Waste.
- Pollution.
- Health and wellbeing: this includes the Lifetime Homes Standards, which are mandatory for level 6 of the Code .
- Management.
- Ecology.

Where there is a relevant requirement under the Building Regulations, the minimum standard in the Code will either equal or exceed the requirement in the Building Regulations.

The Code for Sustainable Homes is voluntary.

Where a home has been designed and built in accordance with the Code and assessed against it, a Code certificate will be provided. The Code certificate will show the home's rating on a scale of 1 to 6 stars, based upon its performance against the nine sustainability categories.

The intention is that the Code will be used to provide anyone buying a new home with better information about the environmental impact of their new home and its potential running costs.

Poland

Poland does not have any specific green buildings standards. In general, buildings located in Poland obtain certificates based on the international standards – American

LEED and British BREEAM. It is possible to apply also for the EU Green Building attestation, but it is not very common in Poland.

Germany

The legal framework for energy-optimized, resource-efficient buildings captures requirements for energy performance of buildings (Directive 2010/31 / EU), energy labelling and eco-design technical building equipment as well as the use of renewable energies and an optimized power supply.

There are requirements for new buildings: Generally, the annual primary energy demand for heating, hot water, ventilation and cooling in the specific case of a building to be constructed will be calculated in accordance with the Energy Saving Ordinance (EnEV), which differentiates between residential and non-residential buildings, based on the annual primary energy demand of a reference building with the same geometry, floor space and orientation dimensions.

There are also requirements for existing buildings, such as the decommissioning of certain boilers or the obligation to insulate the attic floor, as well as specific requirements for central heating and other heating technology systems. Event-related duties obligate the building owners and require structural measures (repair / renovation).

Spain

In Spain, it is mandatory for the promoter or owner of any building (i.e. residential and non-residential) to obtain the Energy Efficiency Certification since 2013 ("*Certificación Energética de Edificios*", in short **CEE**). In particular, when it comes to any acquisition or lease process, the CEE must be handed over to the buyer or tenant of the real estate. The CEE basically contains a rating from A to G (where A means the most and G the least efficient) concerning energy efficiency and consumption characteristics of the building or part thereof (housing, office, premises, etc.). The criteria used to determinate the energy efficiency are, for example, the energy demand needed for heating and cooling the building, the demand for domestic hot water and the amount of primary energy consumption and CO₂ emissions. The principal aim of this certification is to *promote* the energy efficiency in all kind of buildings and to provide the buyer or lessee with standard comparison data at the moment of the acquisition or rental process. The Spanish legislation also provides for administrative pecuniary penalties depending on the level of infringement: The range extends from simple infraction of not applying for the certification up to falsification cases, if so.

On the other hand, Spain already in 2007 approved the so called Technical Building Code ("*Código Técnico de la Edificación*", in short **CTE**) in order to improve the often perceived as deficient quality of the Spanish housing construction in comparison to other European standards. The principal aim of the CTE was to set basic requirements for improving certain aspects in the construction process, such as

minimum requirements in the field of hygiene, health and environment; energy-saving measures; solar thermal technologies for water heating and photovoltaics and minimum requirements with respect to noise impacts. The CTE also incorporates a large number of European law requirements such as technical building energy-saving measures.

In accordance with the Energy Performance of Buildings Directive of 2010, Spanish law is also pre-setting that all new constructed buildings from December, 31st 2020 on will be almost with “zero” energy consumption. The minimum requirements to be met by those buildings will be determined by new regulations concerning the CTE.

Sweden

In Sweden, there are several national green building standards. The major ones are though member – and sometimes also administered by – the Sweden Green Building Council, which is a non-profit organization owned by its members, open to all companies and organizations within the Swedish construction and real estate sector who wish to develop and influence environmental and sustainability work in the industry. They are members of the World Green Building Council since 2011. The most common local brand is “Miljöbyggnad” which is a certification system for buildings based on Swedish rules and construction practices. It is a relatively simple and cost effective system for creating environmentally sustainable buildings. Miljöbyggnad give a receipt for important qualities of energy, indoor environment and materials. The system can be used for newly constructed and existing buildings, regardless of size. A building can achieve the grade bronze, silver or gold.

6. Certification for Green Building

As our German Reporter correctly writes, a “Green Building certificate neither replaces official permits nor does it certify viability of a project. A sustainability certificate is no guarantee that a building is actually constructed and used in accordance with the application documents, which are the basis of certification. Rather, it is usually assumed in the certification that the self-declaration submitted with the application documents is correct and complete.” “Classically, a certification scheme undergoes at least two essential stages to completion of the building: 1. Quick-Check (project analysis, containment of the desired label, initial assessment, goal setting, rough measures and costs, decision preparation) and 2. Certification (Project organization, planning, concept optimization, procurement, Score tracking, commissioning).”

Germany

The following certification systems are most common in Germany: DGNB, LEED and BREEAM.

LEED

“The first certifications as LEED (Leadership in Energy and Environmental Design) were made in 2000. The certification LEED is currently the world's most widely used. It is measured in seven categories - Sustainable Sites, Water efficiency, energy & atmosphere, materials & resources, indoor environmental quality, innovation in design, regional priority - and sets the focus on the environment. The evaluation is based on a point system. The certificates are issued in the stages "Certified", "Silver", "Gold" and "Platinum". For platinum, 73% of points must be achieved, for gold only 55%.”

BREEAM

“The certification system BREEAM (Building Research Establishment Environmental Assessment Method) from the United Kingdom is on the market since 1990 and is thus the oldest certification standard. The system has its focus also in environment-related matters and is evaluated nine categories: wellbeing management, health &, energy, transport, water, materials, waste, pollution, land use & ecology. The certification is carried out on the steps of "certified", "good", "very good" and "excellent". Similar to LEED for the highest of the three awards is the compliance of about 70% of the criteria required.”

DGNB

“The certification of the German Sustainable Building Council (DGNB) was introduced in 2007, the first certifications were in 2009. After the registration of the property at the DGNB and the establishment of target levels for building characteristics, the DGNB grants a precertification. Planning and construction are therefore to be documented in accordance with the DGNB guidelines. After construction of the building, characteristics and the documentation are being checked. If the requirements are met, the certificate is issued. The DGNB Certificate rates a building in six categories: The ecological quality, economic quality, socio-cultural and functional quality, location quality, process quality and technical quality. Here, the overall focus is on the aspect of sustainability. There are certification in stages "bronze", "silver" and "gold".”

Switzerland

The sustainable building standard “MINERGIE” was launched in 1998. It aims at achieving lower energy and resource consumption and a higher level of comfort, regardless of building design or type. To date, over 40'700 buildings have been voluntarily certified as Minergie, Minergie-P (“passive house”) or Minergie Eco. About 15% of the new constructions comply with this standard (www.minergie.ch) Switzerland-wide, and over 50% in Zurich.

To date, 16 buildings have been certified under BREEAM (www.breeam.ch), 45 under LEED (<http://ch.usgbc.org/projects?keys=switzerland>), and 13 under DGNB, under its Swiss version certified by the Swiss Sustainable Building Council (www.sgni.ch).

A new label is about to come onto the Swiss market: the SNBS-Standard, promoted by the Sustainable Construction Network Switzerland (www.nnbs.ch/standard-snbs), a joint initiative between Government and Economy. It will integrate the existing tools and labels and be fully compatible with the Swiss planning and construction culture. The SNBS-Standard takes into account the building itself, as well as its context. It integrates the three dimensions of sustainable building (society, economy and environment) equally and as completely as possible, over the whole life cycle of the building, from the conception, to the realisation and operation.

Argentina

Those who wish to voluntarily certificate their buildings could comply with the requirements demanded by foreign processes, such as LEED.

Czech Republic

In addition to the widely used BREEAM and LEED certificates, there is a Czech certificate for administrative buildings based on international SBTool (Sustainable Building Tool) certificated. It respects fully the conditions of the Czech building industry and is in accordance with the local legal system. Criteria and their value have been identified by a panel of experts and take into consideration priorities of the Czech Republic.

SBToolCZ indicates the level of building quality regarding principles of sustainable construction. SBToolCZ examines and certifies the influence a building has on the environment, its social and cultural aspects, functional and technical quality, economical aspects, management and location of the building.

Poland

Poland has not developed its own certification system and uses the British BREEAM and the American LEED certification systems. Currently in Poland there are 249 certified buildings and several further applications await decision. In 2015 there were 249 certified buildings, 202 in BREEAM standard and 47 in LEED standard.

Spain

Apart from the international recognized certifications such as BREEAM and LEED (Source: <http://breeam.es/>; <http://www.usgbc.org/leed>), Spain has an own evaluation method and certification in relation to environmental friendly buildings called “*Certificación VERDE*” (means: GREEN Certification), if the building meets

the predetermined criteria (Source: <http://www.gbce.es/es/pagina/certificacion-verde>). This certification is issued by the Green Building Council España (in short **GBCE**) and represents an autonomous organization, associated with the “World Green Building Council” (**WGBC**: <http://www.worldgbc.org/>). This method is often used to generally improve the sustainability of offices, residential and commercial buildings.

The evaluation system is based on a performance method in accordance with the philosophy of the previous mentioned CTE (“*Código Técnico de la Edificación*”) and the European directives. One of the main purposes is to promote the bio-architecture and the environmentally friendly buildings, compatible with the surroundings and the high levels of comfort and life quality for their users.

The rating goes from 1-5 green leaves (“*Hojas verdes*”): A construction with 5 leaves represents the least possible environmental impact.

The parameters which are taken into account for the evaluation process are the following:

- Impacts that are **not generated by the building itself**, but related to the plot on which such building is located: For example, the reduction of light pollution or the optimization of the irrigation system.
- Impacts generated by **energy consumption** in all its forms: For example, reduction of the conventional energy consumption and production of energy from renewable sources.
- Impact on **natural resources**: For example, reduction of water consumption or construction materials with less impact on the environment.
- Impact on the **interior of the building**: For example, installation of a good illumination or acoustic insulation.
- Impact on **social and economic aspects**: For example, creation of rest and leisure places.
- **Service quality aspects**: For example, space efficiency or accurate maintenance management plans.

7. Differences for residential and non-residential buildings

Argentina

There are no differences for residential or non-residential buildings as no national or provincial regime for green buildings has been enacted so far.

United Kingdom

There are different targets for commercial and non-commercial buildings. The government has also introduced a specific code for residential homes (see above). There is also a specific code for public sector housing (i.e. housing provided by local authorities).

Czech Republic

For example, the maximum values of primary energy consumption are lower for residential than for non-residential buildings.

Poland

Residential buildings, built for own use, are exempted from the requirement of having an Energy Characteristic Certificate.

Germany

There are different calculation methods and different reference values for residential buildings and non-residential buildings.

Spain

There are no major differences between residential and non-residential buildings concerning green building regulations, since they apply to both equally.

8. Higher costs for Green Buildings

Argentina

According to non-official information³, building a sustainable construction in Argentina is 20% more expensive than with traditional methods and materials.

Czech Republic

It is for sure more expensive to build a green building. However, there are many financial incentives available.

In addition, reliable investors do not underestimate the role of expected future savings and higher attractiveness of their buildings for prospective tenants or buyers.

³ From the Interview with the architect Guillermo Bruzini from the Argentina Green Building Council, performed on December 2015.

Poland

A green building in Poland is about 5% more expensive than regular house. Extra costs are generated mostly by the specialized technical documentation (costs of certification), building materials and technology (more sealed ventilation system, heating technology etc.). Expenses may be reduced thanks to subsidies.

Germany

Due to the requirements for the establishment and / or modification of buildings by the German regulations, construction costs are initially increased considerably. However, the requirements do not only apply to green buildings but to all (new) buildings. Only measures beyond these requirements, which may be necessary for a certification, must be investigated seriously regarding their profitability because of their voluntary nature.

“As a result, increasingly more investors show interest in green buildings, although their establishment initially is more expensive than a conventional construction. Experts estimate the additional costs of green buildings to be about two to five percent. Considering the possible subsidies and in consideration of the lifecycle costs, the increased costs (materials, certification, etc.) are likely to pay for themselves quickly. Therefore, this concept is interesting for investors also in marketing terms.”

Spain

At first glance, it seems that Green Buildings are more expensive than conventional buildings, but according to several studies, the upfront costs of Green Buildings are only between 1-3% higher than the cost for a conventional building⁴.

However, the return of the higher investment cost is almost immediate, between 2-5 years, because of several circumstances, such as the reduction of the energy consumption between 50% up to 80%. In addition, several studies found out that the buildings would yield savings of over ten times the initial investment after 20 years.

9. Public financial incentives (subsidies)

Argentina

Incentives are local and fragmented, as there is no nationwide implemented regulation. Green Roofs Law establishes tax incentives in the City of Buenos Aires according to the type of building where the green roof is built.

⁴ Some sources:

http://www.worldgbc.org/files/1513/6608/0674/Business_Case_For_Green_Building_Report_WEB_2013-04-11.pdf; <https://bloomington.in.gov/green-building-costs>;
<http://www.calrecycle.ca.gov/greenbuilding/design/costbenefit/report.pdf>;
<http://www.usgbc.org/Docs/News/News477.pdf>

United Kingdom

The private rented sector has some of the least energy efficient housing stock. This is a particularly difficult sector in which to promote energy efficiency measures as usually it is the tenants who benefit and so there is little incentive for landlords to invest in improvements. There was, therefore, a Landlord's Energy Saving Allowance (LESA) that allowed landlords in the private rented sector to claim income tax relief (or corporation tax relief, as applicable) for capital expenditure on various energy efficiency measures. LESA ended in April 2015 and is not available for expenditure incurred after that date.

There is also a stamp duty rebate and, on energy-saving construction materials, a reduced VAT rate, which was declared contrary to EU law.

Czech Republic

There is vast variety of financial incentives of available to households, condominiums, industry as well as local authorities.

As a matter of example, a subsidies' program called New Green Savings, managed by the Ministry of the Environment and administered by the State Environmental Fund, is a very successful tool focused on energy savings and renewable energy sources in family houses.

The main instrument for the implementation of energy-saving measures in industry will be the Operational Program Enterprise and Innovation for Competitiveness. The two main types of measures supported are the improvement of the energy performance of buildings and the increasing of the energy efficiency of technologies.

Poland

There is no support system dedicated directly to green buildings, but the State undertakes certain actions to support energy saving initiatives. Individual buildings and apartments projects can obtain financial support for the partial repayment of the bank loan, spent for increase of energy efficiency.

Germany

The state-owned development bank KfW offers in the areas of housing, construction and energy savings a wide range of programs that are used to finance investments in residential property. Promotional purposes are the creation of home ownership, the energy efficiency of buildings, modernization of housing, the construction of economical new buildings and the conversion of heating systems to renewable energies. For example with the KfW promotional program, the 151 "Energy-Efficient Refurbishment" improving the energy efficiency of existing building to KfW Efficiency House is being supported. The renovation to a KfW Efficiency House is provided by a long-term low-interest loan of up to 100,000 euros per unit

or 50,000 euros for individual measures. For the financing of individual energy refurbishment measures (insulation, window replacement and renewal or optimization of heating and ventilation system), the KfW promotional program 152 is suitable. Also eligible are consulting, planning and construction supervision and the necessary extra work.

Also possible is the promotion of people, companies or organizations who use solar energy to generate electricity and to invest in a photovoltaic system. Here up to 100% of eligible net investment costs are funded, more than 25 million euros per project.

In 2013, the construction of a total of nearly 129,000 units - and so about half of all newly built residential building – was KfW-funded and therefore built to better standards than the EnEV prescribes

Since 2006, the Federal Government provides one billion euros per year under the "funding initiative Housing, Environment, Growth" to make the programs reducing CO₂ emissions attractive and in order to achieve the national climate change commitments under the Kyoto Protocol.

As part of the market incentive program the Federal Office of Economics and Export Control (BAFA) supports solar thermal and biomass conditioning and heat pump with one-time grants. Since April 2015, the grants in single and multi-family houses as well as in commercial and public buildings have been increased.

Spain

Yes. Financial incentives are mainly focused to the energy rehabilitation of the existing buildings.

10. Advantages in the building process

Argentina

As Green Buildings construction in Argentina is a very recent concept, in general terms, there are no general advantages for constructions under this new techniques.

Czech Republic

Green buildings do not give any advantage in this matter; rather the contrary as not all the staff employed by building authorities has sufficient knowledge in the sector.

Poland

“Kawka Program” which is dedicated, among others, for support of the energy efficiency. The programme focuses on extension of heating network, reduction of local, non-ecological heat sources, and popularisation of renewable energy sources.

There is also a programme called “Rys”, which is intended for thermo-modernization of existing family houses. The funds could be used for thermo-modernization works, eg. insulation of walls and exchange of heat sources or internal installations. Subsidy is granted in a form of preferential loans.

Germany

In the approval process itself, there are no advantages for green buildings. For example it is not faster nor does it follow another method. Provided, however, are related exemptions from general regulations, e.g. the use of renewable energy.

Spain

There is no advantage in the permit process for a green construction. Green construction has to meet the technical requirements of the elements, which will be included in the building.

11. Other advantages

Argentina

At a general point of view companies’ motivations to performing Green Buildings constructions in Argentina can be summarized as follows:

- Optimizes the use of resources (water, energy, raw materials, etc.).
- Improves community relations.
- Benefits the positions towards the market.
- Improves Corporate Social Responsibility.
- Could improve relationship with local government.

Czech Republic

It is an overall trend that, mainly in the area of lease of retail and office spaces, plays an important role. It is quite simple mathematics: in Green Building the tenants pay lower service charges whereas not the entire amount of increased investment costs can be reflected in the rent (due to competition). Therefore, even old office and retail buildings are investing into the green technologies and apply for various certificates.

In addition, the Czech government is considering tax exemption for nearly zero-energy building for the real estate tax.

Finally, all the investments into the reconstructions and modernization of buildings have very positive macroeconomic impact on the Czech economy as a whole.

Poland

The only advantage (apart from the public image and growing popularity of the green buildings) is a limited subsidy program.

Germany

The users of green buildings – especially companies – will upgrade their corporate image (specifically through certification). In addition, green buildings promise a positive development of the property value, lower life cycle and operational costs as well as the realization of higher rental and sale prices.

For investors and developers there are also increased marketing advantages because of an increased customer interest. This in turn provides greater predictability and thus possibly financing advantages. Many companies are aware of this and understand green building as an image project. In mid-2014 certified office space in the seven German cities of Berlin, Dusseldorf, Frankfurt, Hamburg, Cologne, Munich and Stuttgart was a total of 5.4 million square meters, or 6% of all office space (end of 2014: 5.4%) , end June 2015 13% more certified land has been registered than six months earlier.

Spain

Green Buildings, apart from less energy consumption, have more benefits than people might think. Studies have shown that Green Buildings, both commercial and residential, have a better merchantability and can command up to 30% higher selling prices and rental incomings than conventional buildings. This is attributed to the attractiveness of those buildings to prospective tenants and buyers in terms of their superior indoor environment, lower operating costs and enhanced marketability.⁵

Green Buildings are also easier to maintain and require fewer repairs. Moreover, its materials are easily removable and reusable. This substantially lowers the maintenance cost of the building and contributes to a quicker return of the initial higher investment.

Some experts argue that the effects a Green Building has on its occupants are just as important as the economic benefits. They create a much healthier environment than conventional buildings because of the incorporation of better air conditioning, lighting and materials. Residents or workers may not realize the effects on a daily basis or at the beginning, but they definitely have a significant impact on a person's physical and mental health, increasing that their life quality.⁶

⁵ http://www.worldgbc.org/files/1513/6608/0674/Business_Case_For_Green_Building_Report_WEB_2013-04-11.pdf

⁶ Sources: <http://dirt.asla.org/2010/03/01/green-buildings-are-healthier/>;

<http://www.usgbc.org/articles/healthy-buildings-and-healthy-people-next-generation-green-building>;

<http://permaculturenews.org/2015/10/06/are-green-buildings-healthier-buildings/>

Finally, some insurance entities even award owners of Green Buildings with more attractive insurance policy conditions because of their lower risk level for the insurer. It is also common that insurance policies offer green upgrades in the event of a loss, albeit at a slightly increased price to reflect the higher upfront cost.

12. Contractual issues

United Kingdom: Green Leases

Broadly, a green lease is a series of provisions within, or associated with, a commercial real estate lease, that encourage or require the landlord and tenant to reduce the environmental impact of the premises. Green leases can go far beyond energy efficiency to include the wider environmental impacts and sustainability of a building, including water management, waste management, sustainable materials for reparations and alterations, and green transport.

Traditionally, the structure of a lease requires the landlord and the tenant to comply with different obligations. The tenant pays the rent and service charge and complies with its obligations relating to its occupation of the building. The landlord complies with obligations relating to the services of the building and grants the tenant quiet enjoyment of the premises. The landlord and tenant will each have their own separate commercial and CSR objectives.

However, where a landlord and tenant want to add green lease provisions to their lease arrangements, they will have a new, joint objective to minimise the environmental impact of the premises. This **shared focus will require a collaborative approach**, in which communication, education and co-operation are key.

Introducing green lease clauses will have an impact on a number of different areas of the lease, including service charge provisions, consent for alterations, reinstatement at the end of the term and remedies for breach.

It may seem that green leases are only appropriate for the newest and greenest of buildings, and that there is not much place for them with older, less environmentally-friendly buildings. However, a green lease can have an even more important role to play with a less green building. "Greening" the relationship between landlord and tenant will enable the building to be occupied and managed in a more environmentally-friendly fashion, so reducing the building's environmental footprint.

Green lease clauses are often roughly divided into "light green", "medium green" and "dark green". The shades of green reflect the wide range of different types of green lease provision that might be used, whether they are legally binding or not, and the extent of the burden they place upon the parties. This terminology reflects the spectrum of clauses that can be used.

Czech Republic

With respect to lease of an old building (office or retail) we shall pay a lot of attention to the service charges and their composition. The goal would be to avoid any possibilities of the landlord to put in the SC budget additional costs spend in improvements or certification process of the building.

In new buildings, plenty of tenants are preoccupied by various issues related to malfunctions of new – and not always reliable – technologies (such as overheating of "green" premises in the summery and cold in winter, leakages etc.), which is very often the case. Plenty of new technologies are not well tested or not implemented by skilled people and the negative impact on the use of the premises can be of high importance.

Poland

In case of sale of a building (or more properly in case of sale of land together with the building) the buyer shall remember that the seller is obliged to provide him with the Energy Characteristic Certificate. In case such certificate is not handed out at the moment of the sale and the seller does not deliver it within a particular time, the buyer may apply for certificate on its own at the seller expense.

When selling a building, it is important to remember about the legal obligation to hand out the Energy Performance Certificate. Failure to comply with this obligation is subject to a fine.

Germany

The National Reports mentions issues in the following contracts:

- **Energy supply contracts:** The design of the contract depends on whether the production is done by the owner, or whether it is carried out by an external contractor.
- **Auditor's contracts:** These contracts get more important due to the private law certifications. With his additional tasks (e.g. the compilation of a life cycle assessment or cost calculations), the auditor gets into the centre of liability for the accuracy and completeness of a Green Building certificate. He is not only liable for compiling and submitting the necessary data for the compliance audit documentation. He namely additionally advises as a professional planner or monitors even the construction and if it turns out later that the building has been built contrary to the documents submitted to the certification authority and thereby also deviates from the self-declaration of the applicant, the liability of the accuracy of a Green Building certificate is carried fully by the Auditor. The agreement between the auditor and the client should therefore contain a clear liability regulation. In the interest of the auditor it is advisable to agree the widest possible limitation of liability – but anyway a remuneration that is appropriate in regard of the risk of liability.

- **Commercial real estate contracts:** Seller, owner and lessor are obliged in commercial real estate ads to name specific mandatory details from the energy certification of the nature of the energy pass (Energy Performance Certificate or energy consumption certificate). Real estate ads are public statements of the seller (specified quality of the purchased item) so that incorrect data in the mandatory details justify a defect of the property and such errors could cause the mandatory liability of the seller. The increased liability risks must be addressed by appropriate design of the sales contract.

Spain

When drafting rental agreements between the owner of a green building and the tenant, special attention has to be taken to:

- The obligations of maintenance of green installations
- The obligations to implement changes in the installations due to a legislative change.

To avoid future discussions on this matter, it should be very clear in the contract who will assume this obligation and maximum cost.

13. Examples of litigation or other experiences

Czech Republic

An insurance company has recently moved to a new beautiful 10-storey building called Main Point Karlín which obtained Platinum, the highest level of certification in the LEED system and won the first place in the architectonic competition MIPIM Awards in 2012 (and many others). Great emphasis has been put on the quality of the inner environment and the building offers offices with abundance of light while noiseless induction units provide a sophisticated ventilation system. The garden on the roof of the building offers a resting area for the employees.

The building uses a number of approaches in its sustainable design, among them, use of the River Vltava's water throughout the summer for building cooling, eliminating the need for compressors and chillers; cooling is further naturally regulated by the colored fibreC elements on the facade which are not only aesthetic but serve to reduce heat gains from sunlight penetration.

Nevertheless, everyone involved in the development and construction of this building missed the fact that any use of surface water is taxed by a specific environmental tax. The tax base is the volume of water which goes through the building's system (irrespective whether it is summer or winter). Since the amount of the water is huge and cannot be regulated, the owner shortly realized that the tax

would increase its costs to astronomical levels. Finally, the owner reached an agreement with the tax authority which demonstrated very positive approach towards this green building and the owner has been partially exonerated from its tax liability.

Germany

In connection with the legal significance of an energy certificate, the OLG Schleswig has decided in regard to EnEV 2009, that the mere delivery of an energy performance certificate by a broker does not lead to a quality agreement within the meaning of § 434 BGB. If the facts do not meet the information in the energy performance certificate, no defect can be deduce from this which could justify warranty rights of the buyer (to the current development of the required information in real estate ads in accordance with § 16a EnEV 2014 see. at 12).

Spain

Case law procedure 589/2009, ended by judicial resolution 2/2012, of Contentious administrative Court nº 13 of Barcelona, dated on January 10th 2012. The object of the procedure was the resolution of a Municipality that denied the license requested by the plaintiff to install **solar panels in a building**. The reason to deny the license was that the installation on the building exceeded the maximum height allowed when installing these panels.

The Court considered that:

- the solar panels met the requirements to be considered as (i) infrastructural installations and (ii) essential service;
- Urban and planning rules of the municipality did not foresee any restriction to these installations.

Due to that, the Court concluded that urban and planning requirements regarding the maximum height of the buildings were not applicable to these installations and (i) annulled the resolution of the City Council and (ii) ordered the municipality to grant the license.

Conclusions

Whereas the concept of “Green Building” appears to be known globally, our National Reports showed us that its legal implementation gives rise to broad array local regulations. It is hence a shattered picture of the concept that emerges from the National Reports. Therefore, foreign investors should seek local advice whenever they intend to build according to the concept of green building. They cannot simply rely on certain sub-concepts of the overall-concept of green building that are available, known or practised in that jurisdiction; they must be aware of possible local regulations having an impact on the price and the realisation of the building.

For many reasons explored in our Report, it is advantageous – or even necessary due to regulatory requirements – to build according to green building standards in most jurisdictions. Adopting such standards, however, does usually not expedite the building permit process.

Interestingly enough, a number of private labels seem to have expanded from their home countries into other markets, mature or not, and have taken a fair share of the market. It is clear that the concept of green building is growing in most markets due to the public and private awareness of energy savings and costs. The authors of this report cannot refrain from considering what might happen when energy prices raise again from their current low level and how such a development might affect the interest for the concept – and the employers’ – public and private – approach on lifecycle costs. It also clear from the National Reports that the concept is to a very high extent busying lawyers when drafting contracts, but to a lesser extent when it comes to litigation, at least so far.

While Buckminster Fuller’s vision – that human societies would soon rely mainly on renewable sources of energy, especially when it comes to housing – has definitely arrived in the real estate business, the final conclusion of this investigation must be that the concept of Green Building is, from a legal point of view, still in the bud. There is a lot to discover yet, but for sure, lawyers practising different fields of law will be involved in the future.

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