

THE SUSTAINABILITY CERTIFICATION BAROMETER

A STUDY CARRIED OUT BY GREEN SOLUCE



2019 EDITION



2019 Edition

of the Sustainability Certification Barometer™

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FOREWORD



The Green Soluce team is pleased to present the 2019 Edition of the Sustainability Certification Barometer™. This edition continues the European analysis started in 2017, and goes into further detail with regards to the country and city scale.

The 2019 edition explores the topic of sustainability certifications beyond just updating last year's data. We have improved our data analytics and graphs, making the results more insightful with regards to the key trends in green building projects.

Compared to the 2018 edition, we have included three new topics: 1) a section on floor area of delivered certifications in Europe, 2) the results of a green building survey (EU focus), which identifies sustainability drivers, benefits and challenges, and 3) a brief view on multi certifications. We continue to present the evolution of the digital and wellbeing certifications to which we have added the BiodiverCity® label.

We produce this yearly study to contribute to the outreach and awareness-raising of the positive impact green building practices have on the real estate sector, our cities and all citizens in their respective communities.

Last but not least, in the 2019 edition we have added a brief view on the rental market for certified buildings in France. This approach was carried out with the help of HBS Research, which crosses our data on certified buildings with the transaction data provided by HBS.

Moreover, with a wide and diverse readership across Europe, thanks to the dissemination of the certification bodies, we are able to reach all types of building professionals: architects, engineers, developers, investors, among others.

A big thank you to all my team at Green Soluce and we hope you enjoy the study!

Ella Etienne | CEO, Green Soluce

THE AUTHOR



What is our mission? We are a consulting firm dedicated to enabling the rise of more sustainable, smarter and user-centric real estate and cities, which we call « agile ».

For the Green Soluce team, achieving agile real estate and cities means successfully combining sustainability (both environmental and societal), wellbeing and digital technology in a user-centric and systemic approach.

As a challenger of the real estate and urban ecosystem, pushing the lines to move it forward, we define ourselves as facilitators and accelerators of projects and organisations that seek and enable impact-driven value creation for all stakeholders.

Green Soluce: 4 hubs of expertise for the agile real estate and cities of tomorrow

Advisory

Green Soluce's strategy, engineering and communications consulting services on key topics of the agile city:

- Consulting on sustainable buildings and cities (ex: energy, LCA analysis, circular economy, water and biodiversity), and certifications.
- Roadmaps for corporate CSR strategy and stakeholder engagement.

Sustainable Finance

- A climate risk and associated financial risk analysis tool to respond to TCFD methodology for real estate assets.
- SRI certification and setting-up of responsible real estate funds.
- Sourcing of responsible projects and committed SRI investors.
- Impact reporting in the context of green and sustainable building bonds.

Learning

A digital platform providing a smart and mobile learning experience on sustainability and CSR with a special focus on real estate and cities.

Content

- The Sustainable Certification Barometer™: an annual study since 2014 and the only quantitative study to date that provides a reliable overview of the green building market in Europe.
- Urban Chronicles™: An international media dedicated to the multidisciplinary and prospective content on the agile city of tomorrow.
(www.greensoluce.com/tag/chroniques-urbaines/)

Furthermore, Green Soluce is the Ambassador for "One Planet Living" in France, a framework recognised and endorsed as a best-in-class approach by WWF and the United Nations.



THE SPONSOR



Vattenfall is a leading European energy company with approximately 20,000 employees. For more than 100 years, Vattenfall has powered industries, supplied energy to people's homes and modernised the way its customers live through innovation and cooperation. Vattenfall is tackling an ambitious challenge : making fossil free living possible within one generation. Therefore the company is driving the transition to a more sustainable energy system through growth in renewable production and climate smart energy solutions for its customers.

SUPPORTING ORGANISATION



Founded in 2006, HBS RESEARCH develops data-based services for professionals. Since its creation, HBS RESEARCH has deemed innovation as a priority by setting up the first accessible French database on buildings, rental values, rental offers and market values. These innovations were endorsed by several organisations such as BPI Excellence, Cap Digital, Les Mercures HEC, Deloitte FAST 50, and FrenchWeb500. HBS RESEARCH also offers business solutions for real estate agents, real estate management and investors.

www.laplacedelimmobilier-pro.com

CERTIFICATION & LABEL BODIES

HQE™

The HQE™ certification by Certivéa and Cerway

The HQE™ certification (High Environmental Quality) will appeal to building owners, public bodies, users, real estate developers and investors, as well as planners and local authorities.

HQE™ is an evaluation and certification tool which gives evidence of a successful commitment to achieving a building or territory in line with sustainability. This approach can be applied all around the world, whatever the local regulatory, cultural or climatic context may be.

HQE™ has been developed for residential, commercial, administrative or tertiary buildings, in every business field, whether they are under construction, in refurbishment or already in operation, as well as urban planning operations and infrastructure assets.

The project team sets its own objectives in the specific context of the operation and makes its own choices for architectural and technical solutions.

The certification process guides professionals all along their project, from the design stage to post construction. They are encouraged to reduce their environmental impact, their water, energy and waste consumption of the building, and to improve the health, the comfort and the wellbeing of the users. This approach leans on an evaluation system based on a scientific method that uses key indicators showing the environmental performance of the building. An independent third-party auditor is involved at the different project milestones to provide evidence for the achievement of the sustainability objectives.

www.certivea.fr
www.beHQE.com

BREEAM®

The BREEAM® certification by BRE

BREEAM® is the world's leading sustainability assessment method for master planning, infrastructure and building projects. It addresses a number of lifecycle stages such as New Construction, Refurbishment and In-Use. Globally there are more than 561,200 BREEAM® certified developments, and almost 2,263,200 buildings registered for assessment since it was first launched in 1990. BREEAM® inspires developers and creators to excel, innovate and make effective use of resources. The focus on sustainable value and efficiency makes BREEAM® certified developments attractive property investments and generates sustainable environments that enhance the wellbeing of the people who live and work in them.

www.breeam.com



The LEED® certification by USGBC

Leadership in Energy and Environmental Design (LEED®) is a globally recognized symbol of excellence in green building and communities. LEED® certification ensures electricity cost savings, lower carbon emissions and healthier environments. LEED®'s global sustainability agenda is designed to achieve high performance in key areas of human and environmental health, acting on the triple bottom line - putting people, planet and profit first. LEED® credits are awarded by third party technical reviewers; are applicable to all building types throughout a building's lifecycle; and are developed in close collaboration with diverse stakeholders from throughout the global building industry. With over 200,000 square meters of building space being certified every day, LEED® is driving international green building practices. There are nearly 90,000 projects using LEED® across 165 countries and territories worldwide and more are registering every day.

<http://www.usgbc.org/leed>

CERTIFICATION & LABEL BODIES



The **DGNB**® certification by DGNB

There are a number of certification systems for sustainable building. The DGNB® System is unique. It provides an objective description and assessment of the sustainability of buildings and urban districts. Quality is assessed comprehensively over the entire life cycle of the building. The DGNB® Certification System can be applied internationally. Due to its flexibility, it can be tailored precisely to various uses of a building and even to meet country specific requirements. The outstanding fulfilment of up to 50 sustainability criteria from the quality sections ecology, economy, socio-cultural aspects, technology, process work flows and site are certified. The system is based on voluntarily outperforming the concepts that are common or usual today. If a performance requirement is met, the DGNB® awards the DGNB® certificate in bronze, silver, gold and platinum. In addition, there is the option of simple pre-certification in the planning phase.

www.dgnb-system.de



The **R2S** label by SBA and delivered by Certivéa.

The digital revolution is changing the way professionals work, thanks in particular to technologies such as the cloud, big data and digital mock-ups. The building sector is also strongly impacted by these developments and faces many challenges in terms of digitisation. The R2S-Ready2Services label, awarded by Certivéa and developed in partnership with the SBA - Smart Buildings Alliance for Smart Cities - and the HQE-GBC Alliance, supports projects to turn buildings into digital service platforms. By becoming connected, buildings are better integrated into the sustainable city.

www.r2s.certivea.fr



The **WiredScore** label

Created in 2013 in New York, WiredScore is a global label dedicated to Internet connectivity for commercial real estate. WiredScore labelling enables developers and investors to understand, improve and promote the connectivity of their assets. Internet access ranks among the top three criteria for building users, along with price and location. Until now, little information was available on building connectivity. The WiredScore label therefore allows more transparency by providing users and real estate players with all the information relating to the connectivity of their office spaces, in order to guarantee highly connected workspaces. World leader in its field and present in more than 160 cities, WiredScore has evaluated the connectivity of more than 1900 of the most prestigious buildings, the Empire State Building in New York, the Shard in London and the Tours Duo in Paris.

www.wiredscore.com/fr/

CERTIFICATION & LABEL BODIES



The **WELL™** certification by IWBI

The WELL Building Standard™ (WELL™) combines best practices in design and construction with evidence-based medical and scientific research harnessing buildings as vehicles to support human health and wellbeing. WELL™ is an independently verified, performance-based system for measuring, certifying and monitoring features of buildings that impact human health and wellbeing. WELL™ is also the first building standard to focus exclusively on the human health and wellness in our buildings and communities. WELL Certified™ spaces can help create buildings that improve the nutrition, fitness, mood, sleep patterns, productivity and performance of its occupants. WELL™ is composed of over 100 features that are applied to each building project. Each WELL™ feature is designed to address issues that impact the health, comfort or knowledge of occupants through design, operations and behavior.

www.wellcertified.com



The **Osmoz®** label by Certivéa

The Osmoz® label brings together a set of new and concrete solutions (evaluation, training, label, benchmarking) to improve the comfort and wellbeing of employees and the CSR performance of organisations through the construction design of buildings, interior design, but also HR services and policies. Thus, Osmoz® contributes to employee fulfilment while contributing to many societal challenges (public health and inclusion among others). The Osmoz® reference system is intended to be educational, progressive, scalable and flexible. It is structured around six axes: lifestyle – environmental health – collaborative approach – functionalities – work-life balance – communication and sense of community.

www.osmoz.certivea.fr



The **BiodiverCity®** label by CIBI

The BiodiverCity® label applies to all urban development projects on an urban, peri-urban or natural site. The reference frame becomes meaningful when the building includes important users and outdoor spaces. It is becoming a risk management tool, or a technical response tool, in some sensitive sites. This standard is relevant for real estate operations that aim for a level of excellence in terms of sustainable construction, ecology or brand image, especially if they include greenery and gardens on or near the site. The BiodiverCity® label notes and displays the performance of real estate projects that take biodiversity into account. Based on an innovative approach that combines living and construction, it aims to promote the design and construction of a new typology of buildings that give an important place to nature in the city.

www.cibi-biodivercity.com/biodivercity/

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Chapter I

ENVIRONMENTAL CERTIFICATION

Analysis and trends
of the environmental
certification market in Europe

Methodology

A | Analysis of delivered certifications

- 01. INTRODUCTION
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 - 03. CERTIFICATION LEVEL ANALYSIS
 - 04. COUNTRY ANALYSIS
 - 05. EUROPEAN ANALYSIS
 - 06. COUNTRY ANALYSIS : FRANCE
 - 07. DISTRICT ANALYSIS / GREATER PARIS
 - 08. COUNTRY ANALYSIS : GERMANY, UNITED-KINGDOM, SWEDEN AND POLAND
-

C | Multi-certification



METHODOLOGY

Creation of the database

In order to analyse the certification trends as accurately as possible, the certification bodies provided us their data for the certifications analysed in the present study. The results presented in the Sustainability Certification Barometer™ assume that the data provided by the certification bodies is complete and accurate. If discrepancies are seen, these will be noted as observations in the report. The dataset were obtained from the following certifications: HQE™, BREEAM®, LEED®, DGNB®, BiodiverCity®, WiredScore, R2S, Osmoz and WELL™. More certification schemes are expected to be added in the future.

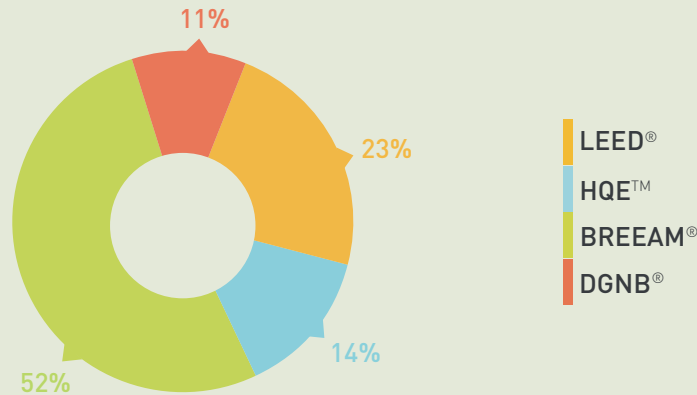


Figure 1 | Breakdown of the certification database showing the percentage of the total raw studied database

The initial databases are relatively heterogeneous, due to the different ways certification bodies classify and name projects. Several methodological principles were set up by Green Soluce to guarantee the reliability of the data. This methodology included homogenising the different categories and formats (e.g. harmonise registered and certified statuses) and processing and removing any duplicates. This data homogenisation helps to compare the various certification at a European scale.

The categories used to characterise the data to build the analysis were:

- the type of certification: environmental, digital, wellbeing or biodiversity.
- the identity form: name of the building, address (street, zip code, city, country), certified floor area and owner.
- the status: registered or certified, the registration and certification dates.
- the typology: office, retail or other.
- the type of use : New Construction and Renovation (NC+R) or In Use.
- the score and level achieved.

Note on duplicates

The data received contain duplicates. In order to identify them as precisely as possible, we consider that a duplicate exists if at least two certifications within one database are strictly identical for the following categories: name, address, score and floor area. If the four conditions are met we only keep one of these certifications.

Note on project accounting

The method for certification accounting must be chosen with the greatest care. Indeed, depending on whether the project is considered as a set of buildings, a single building or a certification within a building, the results and analysis will be very different. We distinguish two methods of project accounting:

Method 1: per certification delivered. The results are presented relatively to the number of certifications delivered, thus a building receiving multiple certification may appear several times (this approach is observed in Chapter I Part A and B).

Method 2: per building certified. The results are presented relatively to the number of buildings with one or more certifications, thus a building receiving a certification appears only once (this approach is observed in Chapter I Part C).

Note on data aggregation of results

In order to aggregate the data in a reliable and coherent way, the following hypotheses were taken:

- A building* is considered as certified if it validated the end-of-works audit, or if it effectively validated the audit of the annual follow-up in the case of an "In Use" certification.
- Apart from the breakdowns between registered and certified projects for the comparative graphs; for all other graphs in the report only certified projects have been accounted.
- Apart from the breakdowns between office, retail and other projects for the comparative graphs, office projects are the only ones that have been counted for all other graphs.
- Certifications following a construction, refurbishment or modernisation phase are not distinguished according to the same criteria from one certification scheme to another, therefore new construction and refurbishment have been merged into a unique category.
- Certifications qualified as "interiors" belong to the "new and refurbishment" category.
- There is a great diversity of building typology. However, for the sake of readability, we have chosen to distinguish three main categories: office, retail and other. The «Other» category includes all buildings that do not fall into the first two categories, excluding residential buildings. For example: buildings for education, logistics, industry, transport, health care, airport, etc.

* The term "building" refers to a building with its own name, having been the object of at least one certification.

Temporal and geographical scope of the analysis

Data analysis is carried out within a defined spatial and temporal scope.

The data studied are only those whose certification was recorded between January 1st, 2008 and December 31st, 2018.

Only 21 European countries are included in the study, chosen as representing the most widely-used certifications. These countries have been grouped sometimes in large geographical sets, called "macro-zones", which are listed below:

- France
- United Kingdom & Ireland
- Germany
- Benelux (Belgium, the Netherlands and Luxemburg), Austria and Switzerland
- Southern Europe: Spain, Portugal, Greece and Italy
- Northern Europe: Norway, Denmark, Sweden and Finland
- Eastern Europe: Poland, the Czech Republic, Slovakia and Hungary

Working at different scales allows us to highlight the different intensity areas of certification and to analyse more precisely the trends of these centres with a finer mesh. Five meshes are distinguished: Europe, Macro-zone, Country, City and District.

Note on the limits of the dataset

There are several limitations with the database which can impact the results and its interpretation:

- Almost 6% of the database are identified as confidential and were not included in the study.
- Several certifications had information partially filled in**.
- From the dataset compiled from all certifications delivered by certification bodies 20.5% didn't have information on floor area.
- Certification schemes version updates impact the re-certification of projects, especially for Build In Use.

** Some information is missing for the following certification datasets : (i) Floor area data for BREEAM® certifications certified in 2017 and for Germany in 2018, (ii) for DGNB®: street information, registration dates, certification numbers, (iii) for BREEAM® some registered status are missing for 2018.

How to read this Barometer

Green Soluce wanted to make it as easy as possible to read the 2019 edition of the Sustainability Certification Barometer™. To understand in an instant all the hypotheses that frame each graph, we have developed a small reading grid. Each page is constructed as follows:

A page legend to indicate the indicators used for the graphs.

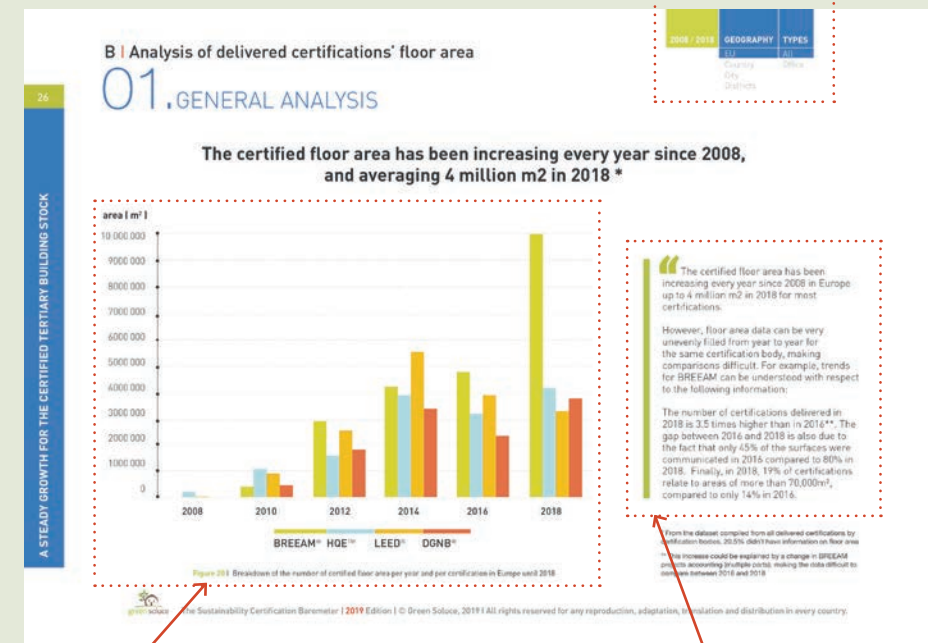


Figure 2 | Reading of the Barometer

One or several graphs to present the results from the analysed data.

Insights which highlight the key takeaways.

ENVIRONMENTAL CERTIFICATION

A | Analysis of delivered certifications

METHODOLOGY

Green Soluce offers different scales of study to better understand the richness of the certification market, particularly in the tertiary sector. The analysis begins with a macro general view at the European level, and ends with a more precise analysis of certain districts of large cities. This provides a natural logic to the reading.

Each conclusion drawn from a graph feeds the rest of the analysis, and allows an ever deeper understanding of the green building and certification market.

The number of certifications delivered according to different criteria (i.e. geographical distribution, typology, etc.) will be summed to capture a number of the characteristics of the certification market.

With this method of delivered certifications it is possible to sum up several of the same buildings, if the building has received certifications from several certification bodies. This is called multi-certification.

This section considers that a unit corresponds to a certification delivered by a certification body.

A | Analysis of delivered certifications

01. INTRODUCTION

1 certification |  | 179 certifications or more

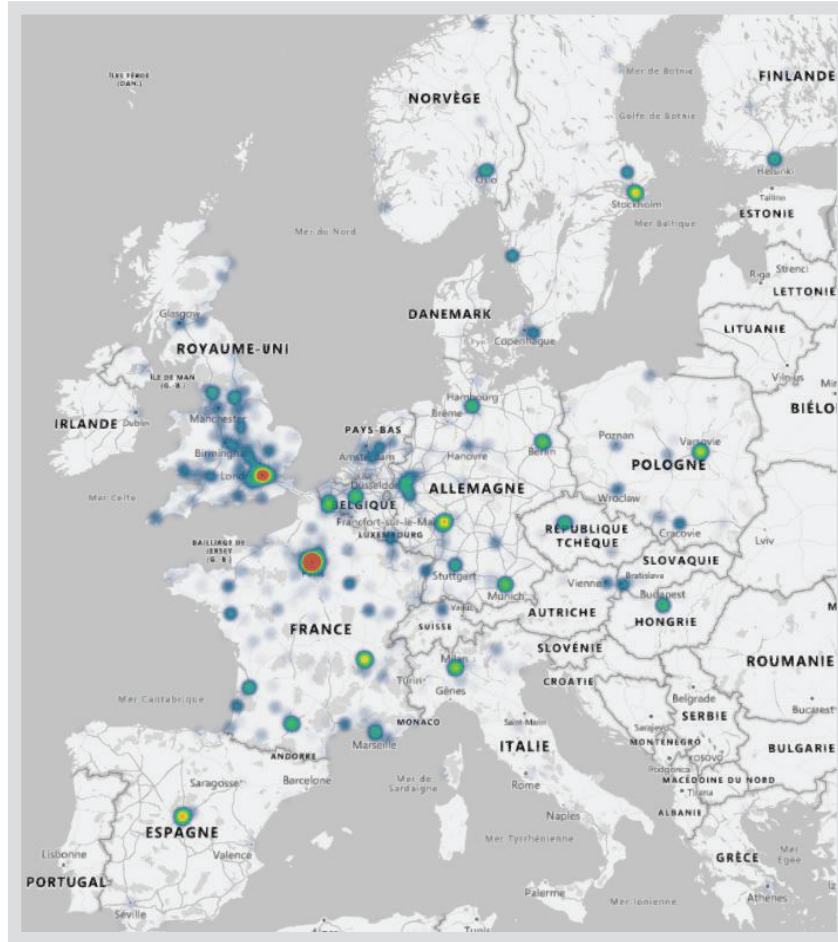


Figure 3 | Breakdown of the total number of certifications delivered in Europe until 2018

“ The real estate sector is one of the most greenhouse gas emitting sectors. The levers in this sector are very important, particularly by improving the energy performance of buildings.

An excellent way to promote green buildings is through certification. While today the historic intensity areas of certification are in France, the United Kingdom and Germany, the whole of Europe seems ready to take up the challenge of the energy and ecological transition.

In the age of global climate change, intensification of climatic events, natural resources depletion and unequal access to energy, it is essential that Europe prepares itself, particularly through a better resilience of its buildings.

A | Analysis of delivered certifications

02. GENERAL ANALYSIS

2008 / 2018

GEOGRAPHY

TYPES

EU

All

Country

Office

City

Districts

The certification market has been continuing to grow across Europe since 2008

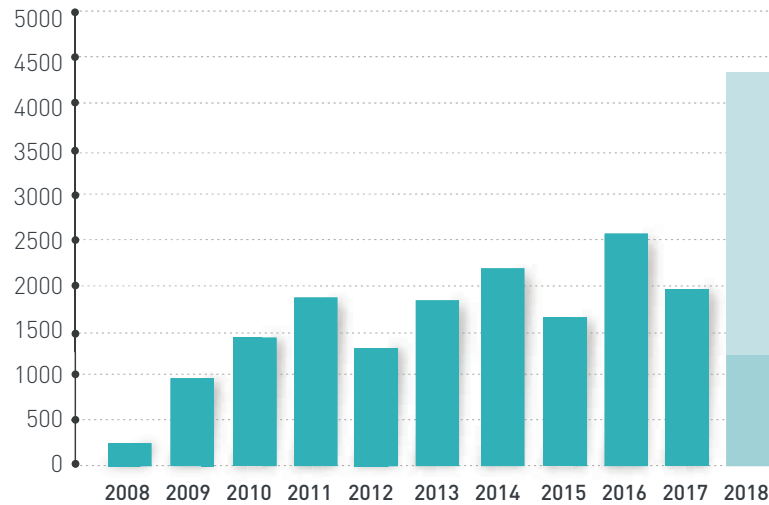


Figure 4 | Breakdown of the number of registrations per year in Europe targeting BREEAM®, HQE™, LEED® and DGNB® certifications. Note: The dotted line represents the inclusion of BREEAM estimated registrations for 2018 (not initially included in the dataset)

“ The number of registrations per year has increased since 2008 in Europe, and approaches the 2500 per year. The high peak in 2018 (around 3000 registrations) is due to the launch of the New Construction scheme in the UK.

DEFINITION

A **registered project** becomes certified after a certain period of time, but remains identified as registered between the date of application for registration and the date when the certification is delivered. It will obtain the status of a **certified project** once the certification is delivered. Then, a project can renew its certification, to maintain its certified status.

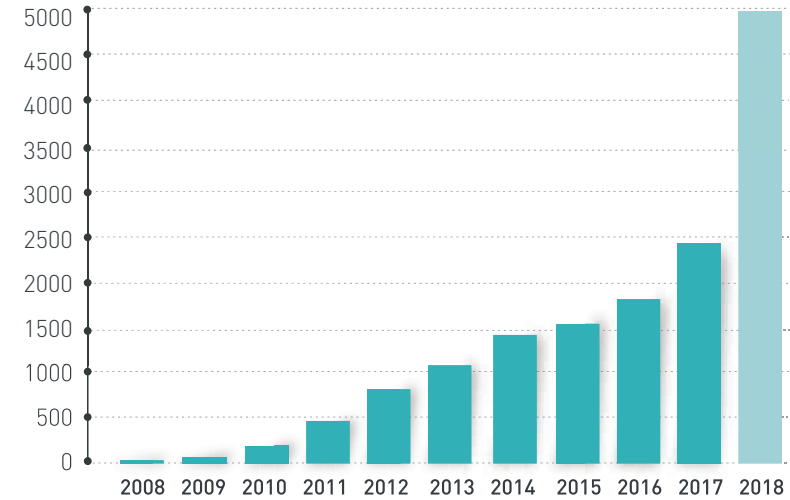


Figure 5 | Breakdown of the number of certifications delivered per year in Europe by BREEAM®, HQE™, LEED® and DGNB®

“ The number of certifications delivered per year has been steadily increasing since 2008 in Europe. There was a sharp increase in the number of certifications delivered between 2012 and 2018 to over 2500. The doubling from 2017-2018 is explained by a change in BREEAM® projects accounting (i.e. multiple parts for BIU), thus care must be taken in the interpretation of this increase. The number of certifications delivered for 2018 remained stable for HQE™, LEED® and DGNB®.

The certification process is an indicator of exemplarity

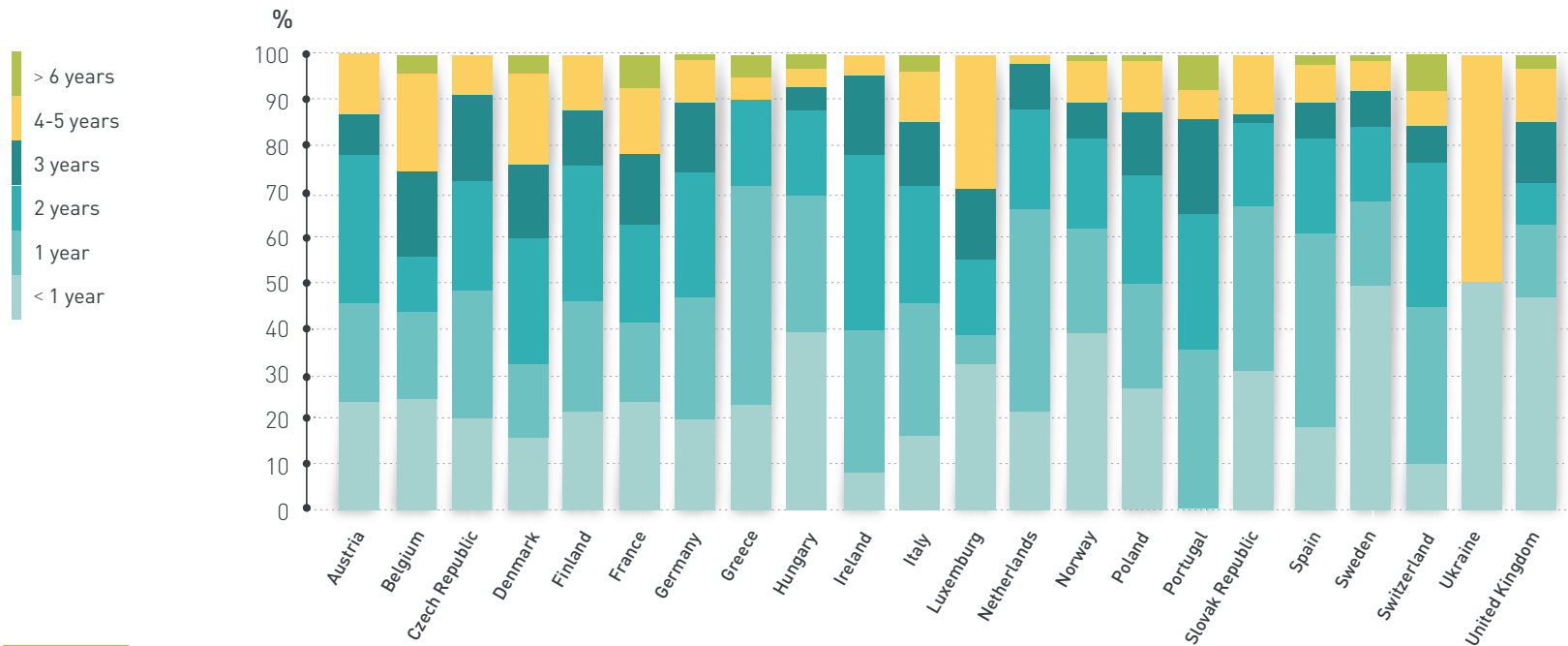


Figure 6 | Breakdown of the number of certifications delivered according to the certification process in Europe until 2018

DEFINITION

Certification process

Refers to the time between the date of registration of the certification and the date at which the certification is delivered with a score.

The certification of a building is a project that requires to be initiated as early as possible in the building design process, in order to better integrate the principles of energy efficiency and respect of the environment.



The certification period reflects a certification process from its schematic design to its final construction phase. The following trends can be found in Europe:

- 36 % of delivered certifications have a certification process that lasts less than one year. It could be inferred that the project was already advanced when the certification process was initiated. Most certifications obtained within 1 year from registration have aimed for the basic level of certification.
- 84% of certifications are delivered in less than 3 years.
- The highest certification levels (i.e. Platinum, Outstanding) are present in a certification process that lasts between 4 and 6 years.

A | Analysis of delivered certifications

02. GENERAL ANALYSIS

2008 / 2018
Certified

GEOGRAPHY

TYPES

EU
Country
City
DistrictsAll
Office

Offices are highly represented in the In Use and NC+R building markets, especially in 2018

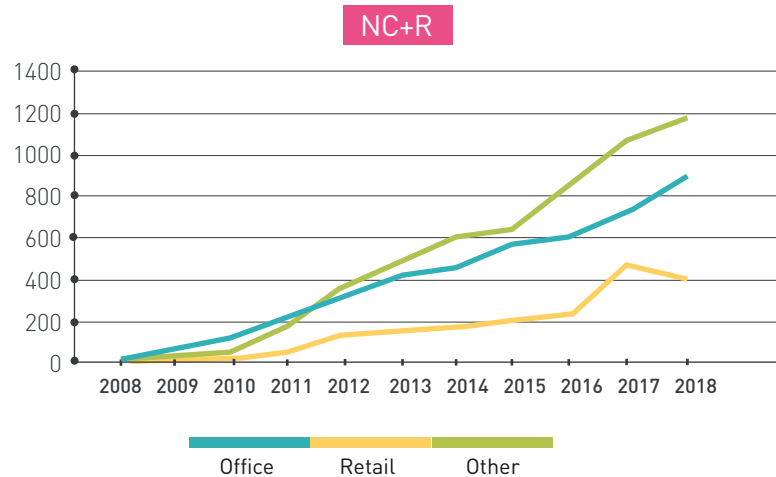


Figure 7 | Breakdown of the number of certifications per typology NC+R in Europe until 2018

“ For all buildings of the NC+R type, the number of certifications delivered each year has been steadily increasing for the past 10 years in Europe. Buildings in the “Other” category have the highest number of NC+R certifications, bearing in mind that the “Other” category is very broad (see Definition). However, Figure 7 confirms the importance of the Office certification market.

DEFINITION

The present study considers delivered certifications for tertiary real estate.

“**NC+R**” stands for New construction and Refurbishment, which corresponds to new constructions and renovations.

“**In-Use**” buildings in operation, i. e. when the building is used by its occupants.

“**Other**” refers to industries, logistic platforms, airport, education buildings, etc.

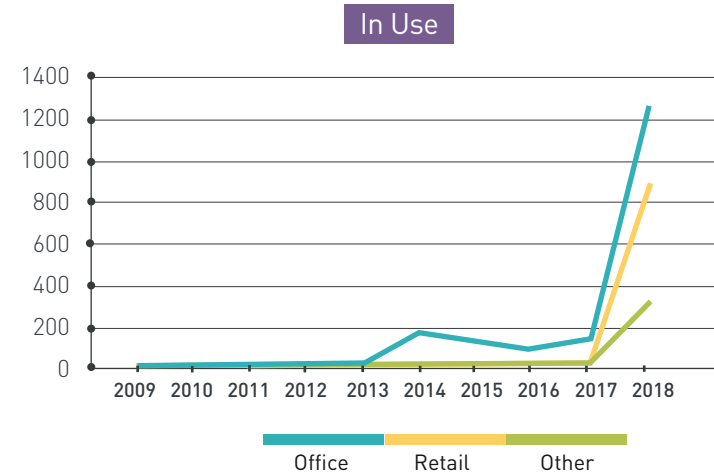


Figure 8 | Breakdown of the number of certifications per typology In-Use in Europe until 2018. Note: Only BREEAM® Part 1 projects were selected

“ For “In-Use” buildings, the Office certification market is dominant. A significant increase in the number of certifications delivered in 2018 for In-Use buildings can be noted. In addition to the natural growth of this market, there is a particular feature of BREEAM®’s In-Use certifications.

The hike in numbers in 2018 responds to the fact that 86% of all BREEAM® In-Use certifications were recertified in 2018, and due to a change in BREEAM® projects accounting (multiple parts). Thus care must be taken in the interpretation of these results.

A | Analysis of delivered certifications

03. EUROPEAN AND COUNTRY ANALYSIS

2018 doubled the number of certifications delivered across Europe compared to 2017

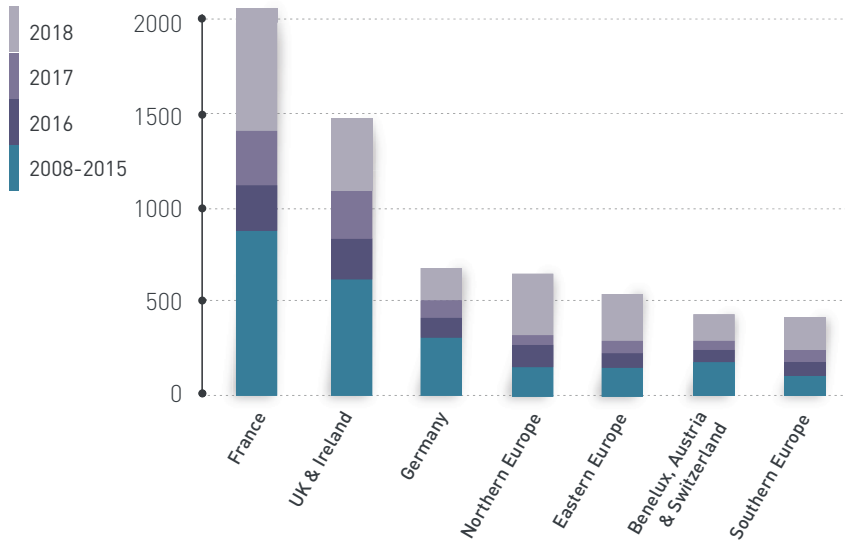


Figure 9 | Breakdown of the number of delivered certifications per region in Europe and per year for office buildings

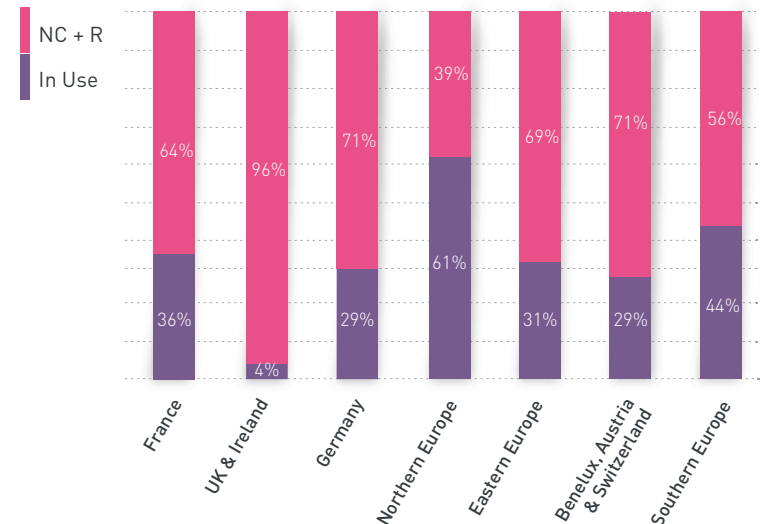


Figure 10 | Breakdown of the number of delivered certifications NC+R and In-Use per region in Europe until 2018 for office buildings

DEFINITION

Northern Europe:
Norway, Denmark, Sweden and Finland

Southern Europe:
Spain, Portugal, Greece and Italy

Eastern Europe:
Poland, the Czech Republic, Slovakia and Hungary

“ Since 2008, the cumulative distribution of the number of delivered office certifications shows that France, the United Kingdom and Germany are important hubs in the certification process. It can be noted that France appears to be the country where the most office certifications were delivered.

NC+R

For NC+R office certifications, The UK and France play a very important role and represent respectively 39% and 22% of the market in 2018.

In Use

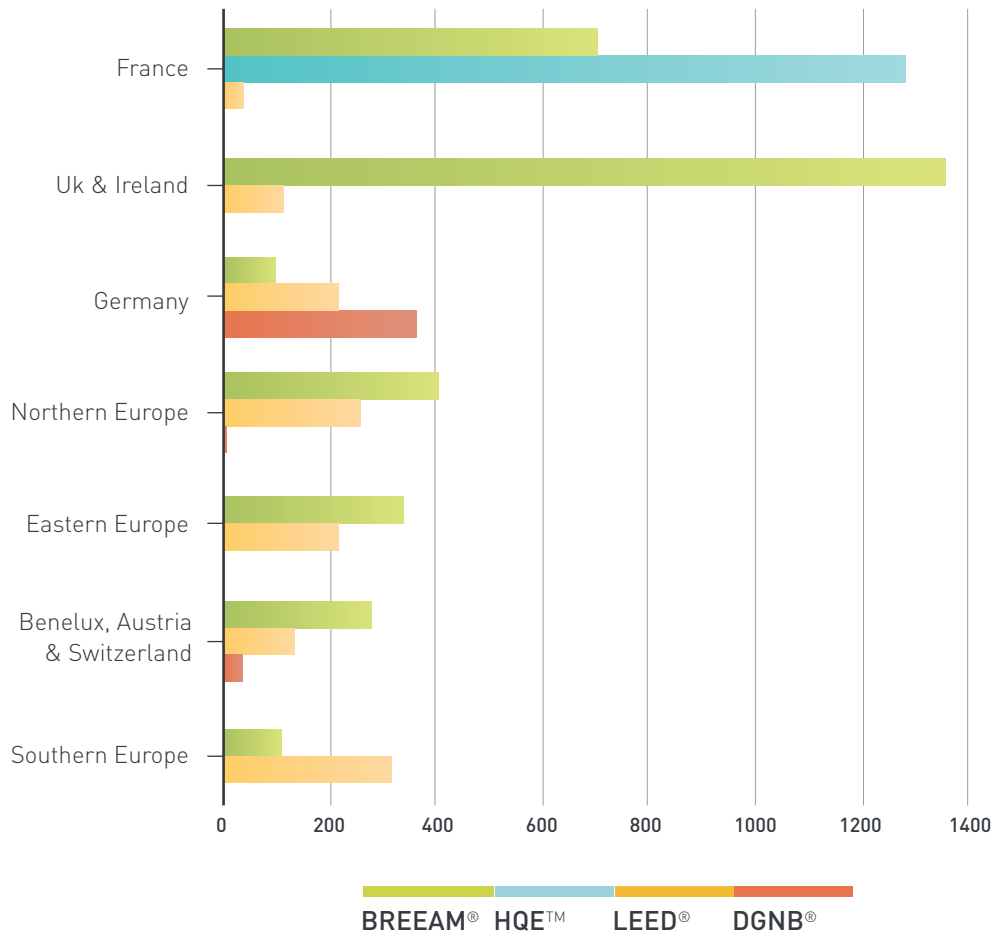
For In-Use office certifications, most of them are located in France, followed by Northern Europe, with respectively 36% and 22% of the market in 2018. On the other hand, among all these regions, it is in the UK that they are the least numerous.

2008 / 2018 Certified	GEOGRAPHY	TYPES
	EU	All
	Country	Office
	City	
	Districts	

A | Analysis of delivered certifications

03. EUROPEAN AND COUNTRY ANALYSIS

BREEAM® and LEED® are present across Europe, with a strong presence of other regional certifications



“ The market of delivered office certifications is largely dominated by BREEAM® certification in the UK, while HQE™ certification is the most important in France and DGNB® in Germany, as they are native from those countries. For the other regions of Europe the distribution of certifications is more homogeneous with a significant presence of BREEAM® and LEED®.

“ This graph highlights the likely presence of double or triple delivered certifications. France is divided between BREEAM® and HQE™. On the contrary, the United Kingdom is almost exclusively subject to BREEAM® certification.

Figure 11 | Comparison of the different types of certifications present in Europe until 2018 for offices



04. CITY ANALYSIS

Poland and Sweden are new intensity areas of certification, in addition to France, the United Kingdom and Germany

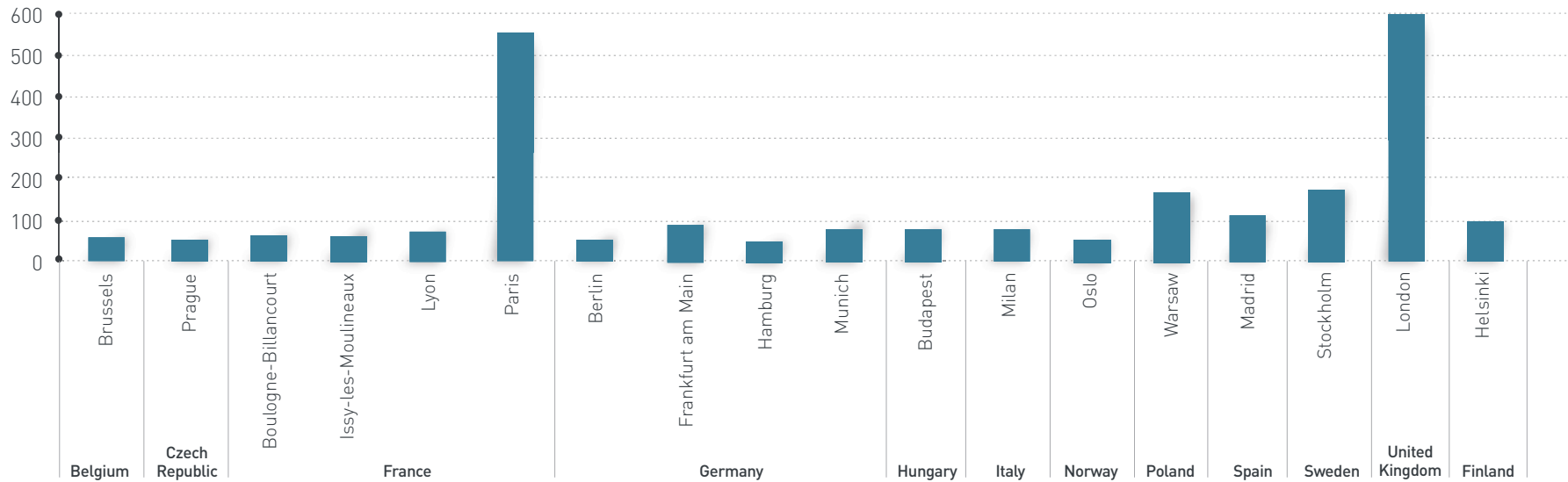


Figure 12 | Breakdown of the number of certified office buildings in several European cities until 2018

DEFINITION

In the above graph cities shown have at least 50 certifications.

“ Breaking down the macro regions, the analysis by country highlights interesting dynamics. It confirms that France, the United Kingdom and Germany play an important role, followed with good dynamism by Poland and Sweden. In Germany, the number of delivered office certifications is spread over several cities, while for other countries it is concentrated in Paris, London, Warsaw and Stockholm.

A | Analysis of delivered certifications

04. CITY ANALYSIS

2008 / 2018 Certified	GEOGRAPHY	TYPES
	EU	All
	Country	Office
	City	
	Districts	

NC+R certifications are the most represented for offices in European cities

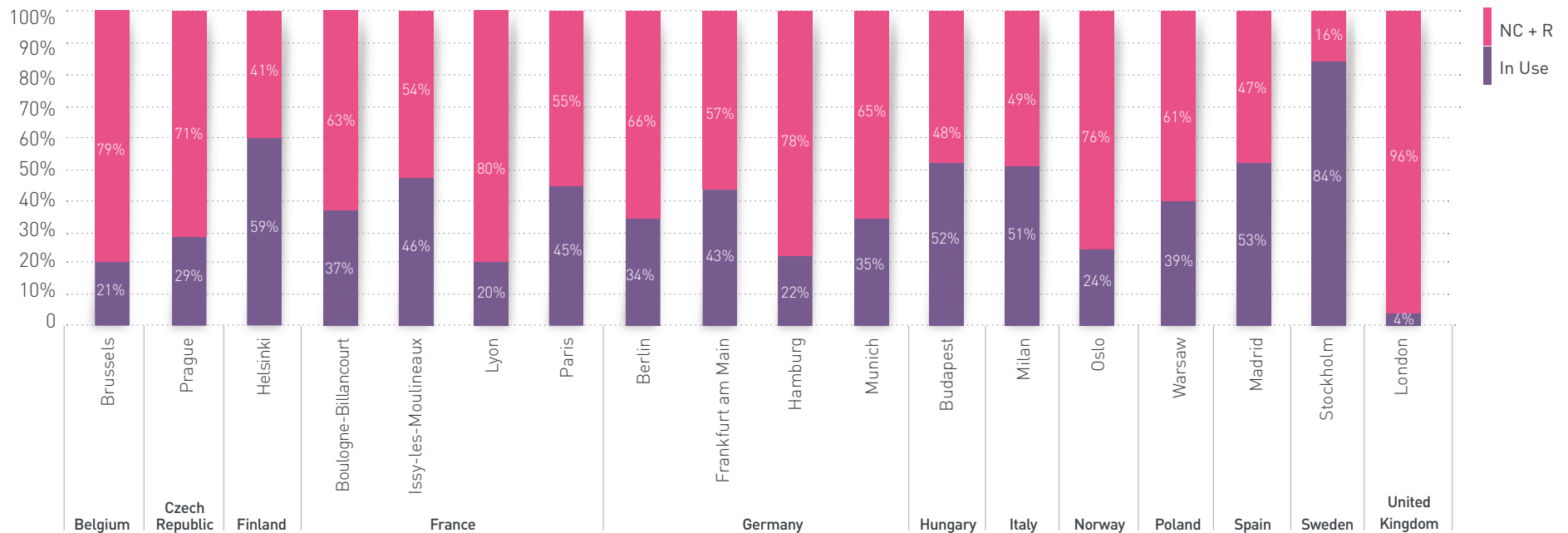


Figure 13 | Breakdown of NC+R and In-Use delivered certifications for offices per cities in Europe until 2018

DEFINITION

In the above graph cities shown have at least 50 certifications.

NC+R

The NC+R certification market for offices is dominant in Europe, with a very strong presence in London, Brussels, Prague and Hamburg.

In Use

The share of In-Use office certifications exceeds 50% for Budapest, Madrid, Milan and Helsinki, reaching 84% in Stockholm, at the complete opposite of London.

A | Analysis of delivered certifications

04. CITY ANALYSIS

From 1 to 50 certifications

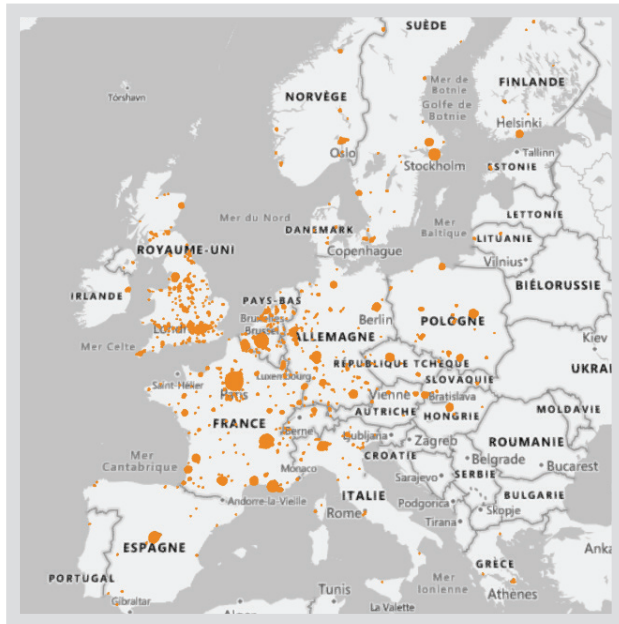


Figure 14.1

From 51 to 100 certifications



Figure 14.2

From 101 to 622 certifications



Figure 14.3

Figure 14 | Breakdown of the intensity of the certification locations across European cities for offices until 2018

“ The distribution of certification activities can be understood at several levels. The present study is carried out at the scale of Europe, European regions, countries and cities. To put all these scales into perspective, a global European vision is shown to understand the dynamics of cities. Indeed, Figure 14.3 confirms our previous observations: Frankfurt and capital cities like Paris, London, Stockholm, Warsaw and Madrid show the most intense certification activity. Figure 14.2 highlights a second category of cities. Indeed, it can be seen that outside the capitals, several cities have a similar activity and are comparable at a European scale such as Lyon, Milan, Helsinki, Munich, Prague, Budapest and Brussels. Finally, the presence of certifications throughout Europe is reflected in Figure 14.1 in particular by the multitude of cities hosting a smaller number of certifications. While this intrinsic number is certainly lower than for large cities and capitals, these cities cover a much larger part of Europe.

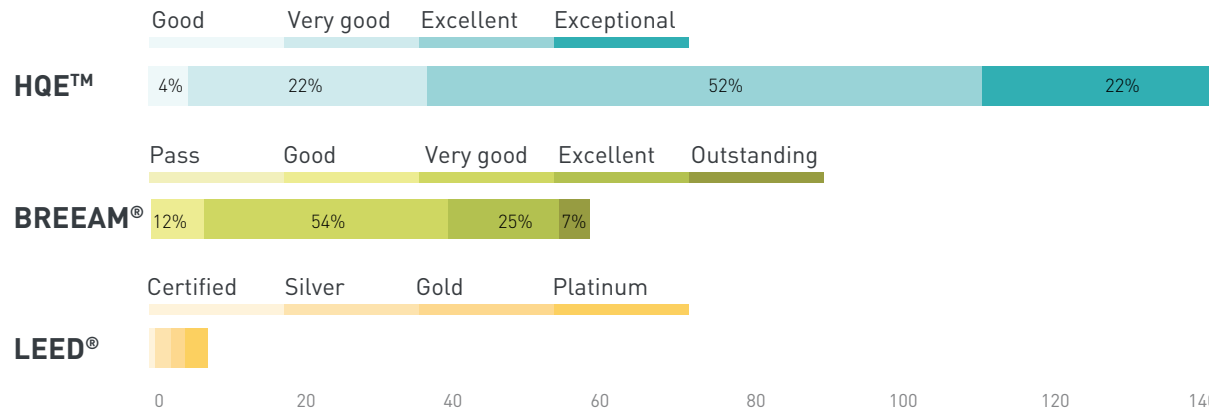
A | Analysis of delivered certifications

05. DISTRICT ANALYSIS

2008 / 2018 Certified	GEOGRAPHY	TYPES
	EU	All
	Country	Office
	City	
	Districts	

High levels of certification are promoted in Paris

Paris : Western Suburbs *



Paris : Central business district **

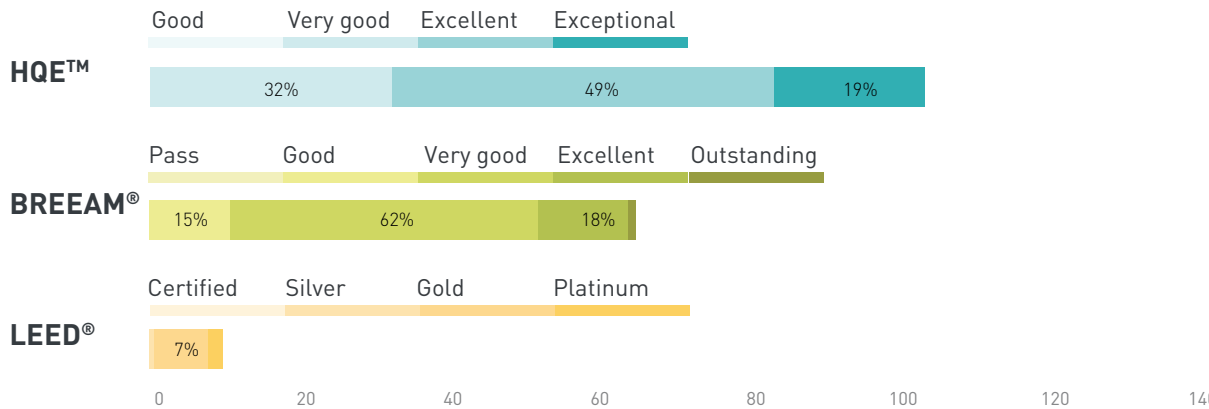


Figure 15 | Breakdown of the number of certifications delivered in the Western suburbs and in the central business district of Paris according to the level of certification until 2018

“ To better understand the dynamics of Paris, the study focuses on the Western suburbs of Paris and the central business district.

HQE™ represents 70% to 80% of certifications in these districts.

Concerning the scores achieved, more than 20% of the certifications reach an Excellent level for BREEAM® and an Exceptional level for HQE™. This illustrates a growing desire on the part of market stakeholders to set an example in terms of energy efficiency and respect for the environment in their buildings.

* The « Croissant Ouest » is defined by the cities with the following ZIP code : 92000, 92100, 92119, 92130, 92150, 92190, 92200, 92210, 92230, 92250, 92270, 92300, 92310, 92360, 92390, 92400, 92500, 92600, 92700 and 92800.

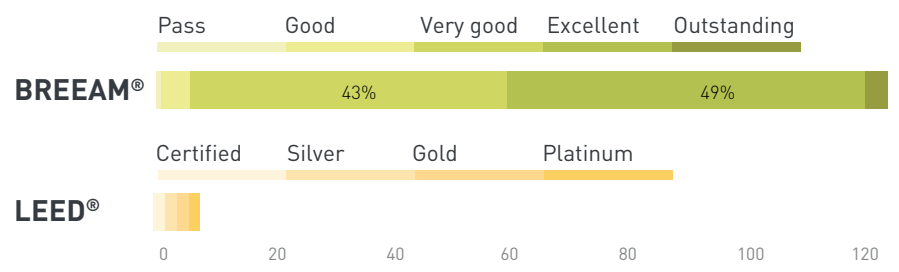
** The « Quartier Central des Affaires », called QCA or Central Business District, is defined by the following districts of Paris: 1st, 2nd, 8th, 9th, 16th and 17th.

A | Analysis of delivered certifications

05. DISTRICT ANALYSIS

In London, Frankfurt and Munich, more than half of the delivered office certifications reach the highest levels

London : City of London



London : Westminster

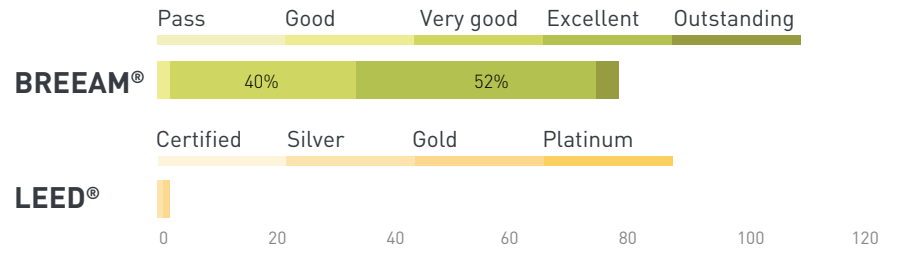
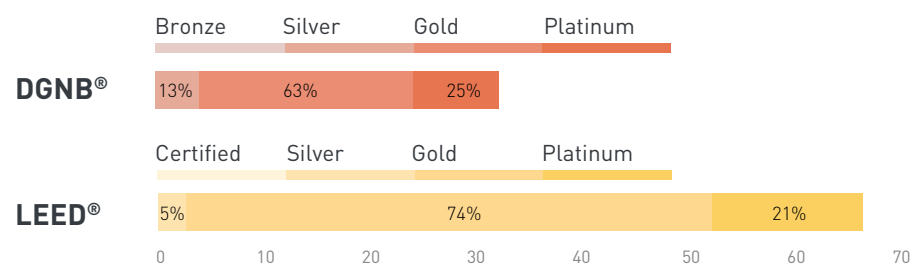


Figure 16 | Breakdown of the number of delivered certifications in the City of London and the Westminster district according to the level of certification until 2018

“ BREEAM’s major presence in the United Kingdom is found in London’s business districts: City of London and City of Westminster. Here, more than 50% of office certifications reach at least an Excellent level.

Frankfurt



Munich

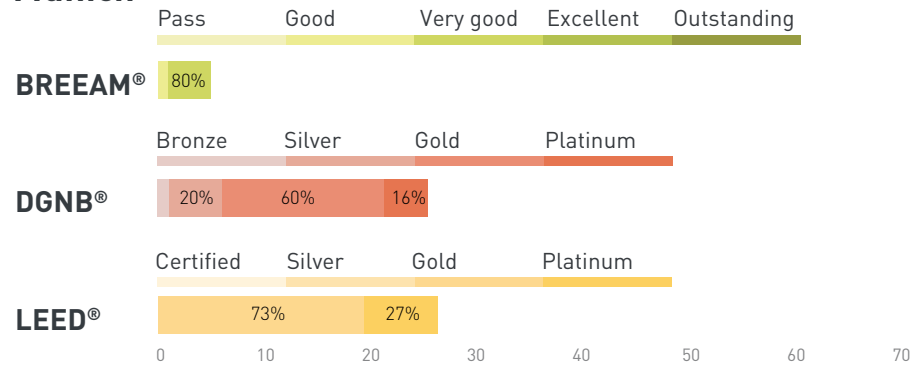


Figure 17 | Breakdown of the number of delivered certifications in Frankfurt and Munich according to its level of certification until 2018

“ In Germany, a more detailed study of Frankfurt and Munich shows that the presence of DGNB® and LEED® varies by city. In all cases, more than 70% of certifications reach Gold and Platinum levels.



A | Analysis of delivered certifications

05. DISTRICT ANALYSIS

2008 / 2018 Certified	GEOGRAPHY	TYPES
	EU	All
	Country	Office
	City	
	Districts	

Stockholm and Warsaw: two new dense areas of certification with high standards

Stockholm

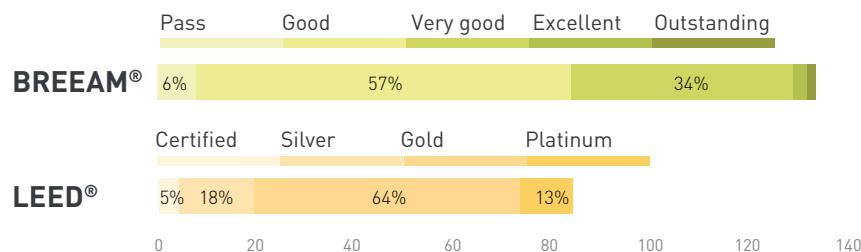


Figure 18 | Breakdown of the number of certifications delivered in Stockholm according to the level of certification until 2018

Warsaw

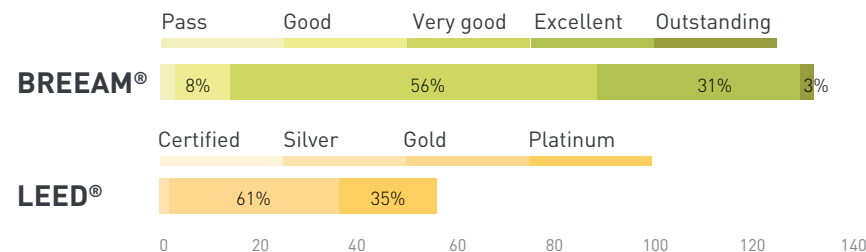


Figure 19 | Breakdown of the number of certifications delivered in Warsaw according to the level of certification until 2018

“ For Stockholm and Warsaw, BREEAM® and LEED® are the two main certifications for offices. More than 70% of LEED® certifications reach Gold level for these two capitals. It should be noted that 35% of LEED® certifications in Warsaw are of Platinum level. As for BREEAM®, more than 56% of the certifications achieve a Very Good level.

“ In conclusion, office certifications are more and more common in major European cities and their business districts. While each country has its own territorial logic, it is certain that the European trend is towards the development of even better energy efficient and resilient buildings. Thus, market players are acquiring the habit to seek the aid of certification bodies (BREEAM®, DGNB®, HQE™ and LEED®).



Henri Reboullet

President and CEO at Vattenfall Energies SA

“Advancing habitat and its environment is a crucial issue. Even if this progress will be long and will depend heavily on local stakeholders, we will contribute to building a more energy-efficient world.”

Created in 1909, Vattenfall is a state owned energy company with a leading position in Sweden. Introduced in France in 2000, it has become a strong player in France in the energy market. It offers carbon-neutral electricity at a competitive price with high-quality local customer service. Henri Reboullet became the President and CEO of Vattenfall Energies SA in 2016 and works towards positioning Vattenfall in the top 5 electricity suppliers and producers in France, together with Yara Chakhtoura, Managing Director of Vattenfall Eolien SAS.

Green Soluce: Vattenfall's goal is to make fossil-free living possible within one generation. How is this strategy applied to Vattenfall's business, particularly in France?

Henri Reboullet: Our ambition is supported by two main strategic lines of action at the global level. First of all, we have invested exclusively in renewable energies for several years, with investments of between 1 and 2 billion euros each year (offshore wind turbines, solar farms, etc.). Second of all, we are also working to electrify a number of industrial processes in order to reduce CO2 emissions. Indeed, Vattenfall supports industries that emit high levels of CO2, such as steel and cement, in the transformation of their manufacturing processes. In the steel industry, we support industrial R&D departments to replace the carbon elements in the production chain with hydrogen and replace CO2 emissions by water vapour. This is HYBRIT initiative undertaken together with SSAB and LKAB. The technology will be mature in about ten years and cars can be built with this carbon-free steel, costing only 150 € more than a standard car. All these initiatives are led from Sweden, and Vattenfall promotes them in all its markets, including France, as best practice, in line with the UN SDGs.

In addition, Vattenfall in France has two main activities that support our overall ambition: offering carbon neutral (and very soon 100% renewable) electricity to our clients, and developing of renewable energies, notably offshore wind.

Green Soluce: How do you see Vattenfall's role in raising awareness and engaging citizens for a more sober world?

HR: Since our arrival on the French market, we carried out several communication campaigns to present our ambition to make fossil-free living possible within one generation. We will continue our efforts to raise awareness of our ambition, sharing our model as a producer and supplier of carbon neutral and renewable electricity.

In France, Vattenfall also sponsors the CEE programme co-led by the French Social Security group and Green Soluce, "Impulsion 2021", which aims to support a large public institution and its large real estate portfolio in the energy and environmental transition by raising awareness and providing training and capacity building.

Our contribution to the Energy Savings Certificates scheme through this type of programme also promotes

our role within society to support the transition towards a more energy-efficient world with a better control of our consumption. We are delighted to be part of this programme.

Green Soluce: What type of action does Vattenfall take to go beyond its role as an energy supplier and become a driving force in the energy transition in France and Europe?

HR: As a part of Vattenfall's strategy to supply climate smart solutions to its customers, the company plans to take a stronger international market position in providing customised decentralised and integrated energy solutions to real estate owners. A new business unit is formed, with operations in Sweden, Germany, the UK and the Netherlands.

In 2017, Vattenfall launched the InHouse programme, an innovative concept of smart energy services for tenant-owner housing associations and property owners in Sweden. The concept combines local energy with customers' own energy solutions to offer a range of customised services in the areas of heating, electricity, charging, controlling, optimizing, measuring, and billing.



Bruno Hamamlia

Director of Strategic Marketing and International Business at Birdz



“ At Birdz, we are committed to onboarding, influencing, demonstrating and delivering sustainable proofs that connected buildings are a strong foundation for top class sustainability plans and policies. ”

Birdz is an active player of smart cities. With millions of data points collected daily, it helps cities, buildings and companies reduce their energy bills and improve their services. With a very wide set of solutions ranging from water and energy management to air quality, it constantly seeks innovation and stands out with its pioneer spirit. Bruno Hamamlia has been the Director of Strategic Marketing and International Business since January 2018.

Green Soluce: We find several definitions of a “Smart City”. What is your definition?

Bruno Hamamlia: There are several definitions to describe the concept of “Smart City”. At Birdz we prefer the concept of Smart Territories because we believe in smart urban and rural areas, not only big cities. “Smart City” remains the most adopted terminology, commonly understood as a concept of living in urban areas where mobility, environment and resource conservation, performance of public services, transparency in policy and governance, interactions with other citizens are enhanced, improved in terms of living standards. Digital applications for users, boosted by network of connected things (IoT) rise and fly as the massive adoption trends worldwide. We are still at an early stage of growth for technologies servicing Smarter Cities, and many improvements are expected to secure and standardize how technology can help deliver “Smart City” for all. At Birdz, we prefer the motto Smart Measures for Smart Communities because we believe strongly in the fact that citizens and enterprises are the real game changers

to deliver smart, with notably new usages adoption, new eco-friendly and inclusive habits.

Green Soluce: How do you see the evolution of connected buildings in Europe?

BH: Europe is among the most advanced regions in the world in the adoption of norms and standards in smart buildings: In 2010, the European Commission and member states adopted an ambitious policy directive to reduce national energy consumption by 20% by 2020 in order to be in line with the Kyoto Protocol. Indeed, in Europe, industrial, commercial and residential buildings represented approximately 35% to 40% of the total gas emissions (in particular CO₂) in 2017. Increasing environmental performances of Buildings in terms of electricity, gas, water consumptions as well as indoor air quality and temperature for individual comfort, all these metrics become must-haves. Connected sensors unified in secure and high-quality telecommunication networks (IoT) constitute the technological foundation of what we call Smart Buildings.

Green Soluce: How will building connectivity help Birdz tackle energy reduction and sustainable buildings objectives and targets ?

BH: Birdz has been a technological expert in the field of environmental IoT for 20 years. Based on technology standards, we shape technology and ICT systems towards a “data to action” view for professionals and decision makers. We rendered technological complexity as seamless as possible in order to deliver the only useful and interesting part: a real time view of all the environmental metrics of a building, including the small and weak signals that were previously unseen. Managers and owners can now improve even more the efficiency of their operation and maintenance programs, being really aware of all the alerts and waste happening during their building asset lifespan. What makes us even more engaged, is the booming number of similar initiatives and focus from governments, private corporations, citizens and public associations, all pushing toward the same objectives : reducing waste, adopting lean behaviors and combining efforts to achieve sustainable results to adapt to climate change.

B | Analysis of delivered certifications' floor area

INTRODUCTION

While a global understanding of the certifications delivered by certification bodies at a European scale shows their importance and evolution, another indicator such as the floor area of these certifications closely relates to the construction market. This section presents a study of the floor area (m²) of the available data.

Even with its limitations, this indicator provides a general view of the evolution of the surfaces being certified yearly.

In the future, this section will be further expanded as more information is gathered from the certification bodies. Thus this first approach per m² is a new approach and will be improved for future editions.

METHODOLOGY

As in the previous section, the data for the floor area required some data treatment to avoid duplicity of same project evaluation within the same certification bodies. Similarly, the study presents aggregate studies based on certified floor area by country, city and typology.

Note that within the study the floor area of different certifications is not added together, as this could result in the double counting for a same building with multiple certifications.

LIMITATIONS

The analysis presented is based on the available data provided by each certification body. The main limitation for the present study was related to the lack of floor area information for several certified projects.

From the dataset compiled from all certifications delivered by certification bodies, 20.5% didn't have information on floor area. To compensate this lack of data, we propose a cartographic study of the intensity of certification activity, by summing the floor areas and representing them spatially.

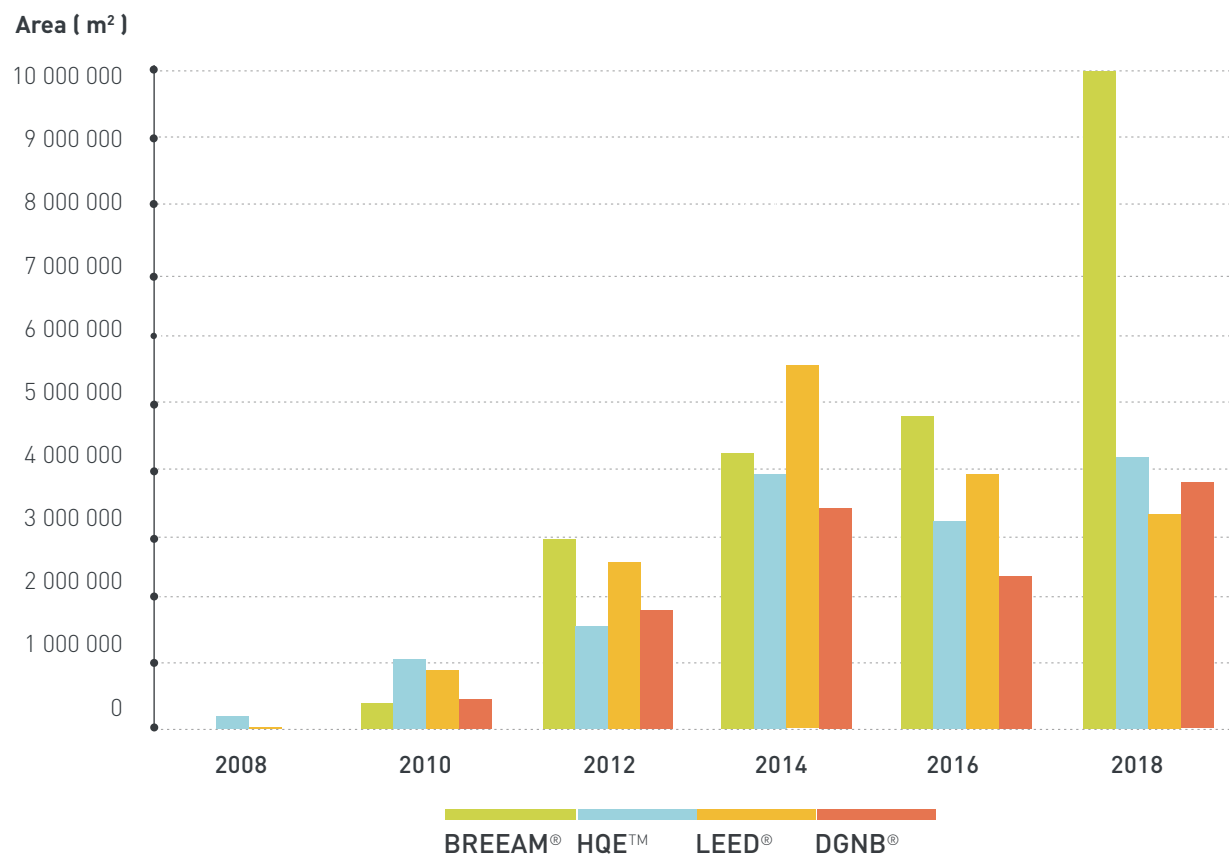
Thus the results presented should not be taken as absolute. Care must be taken in the interpretation of results.

B | Analysis of delivered certifications' floor area

01. GENERAL ANALYSIS

2008 / 2018 Certified	GEOGRAPHY	TYPES
	EU	All
	Country	Office
	City	
	Districts	

The certified floor area has been increasing every year since 2008, and most certifications achieve 4 million m² that year*



“ The certified floor area has been increasing every year since 2008 in Europe up to 4 million m² in 2018 for most certifications.

However, floor area data can be very unevenly filled from year to year for the same certification body, making comparisons difficult. For example, trends for BREEAM® can be understood with respect to the following information:

The number of certifications delivered in 2018 is 3.5 times higher than in 2016**. The gap between 2016 and 2018 is also due to the fact that only 45% of the surfaces were communicated in 2016 compared to 80% in 2018. Finally, in 2018, 19% of certifications relate to areas of more than 70,000m², compared to only 14% in 2016.

* From the dataset compiled from all delivered certifications by certification bodies, 20.5% didn't have information on floor area

** This increase could be explained by a change in BREEAM® projects accounting (multiple parts), making the data difficult to compare between 2016 and 2018

Figure 20 | Breakdown of the number of certified floor area per year and per certification in Europe until 2018

B | Analysis of delivered certifications' floor area

02. TYPOLOGY ANALYSIS BY CERTIFICATION BODY

The office category has been predominant for most certifications across Europe since 2008*

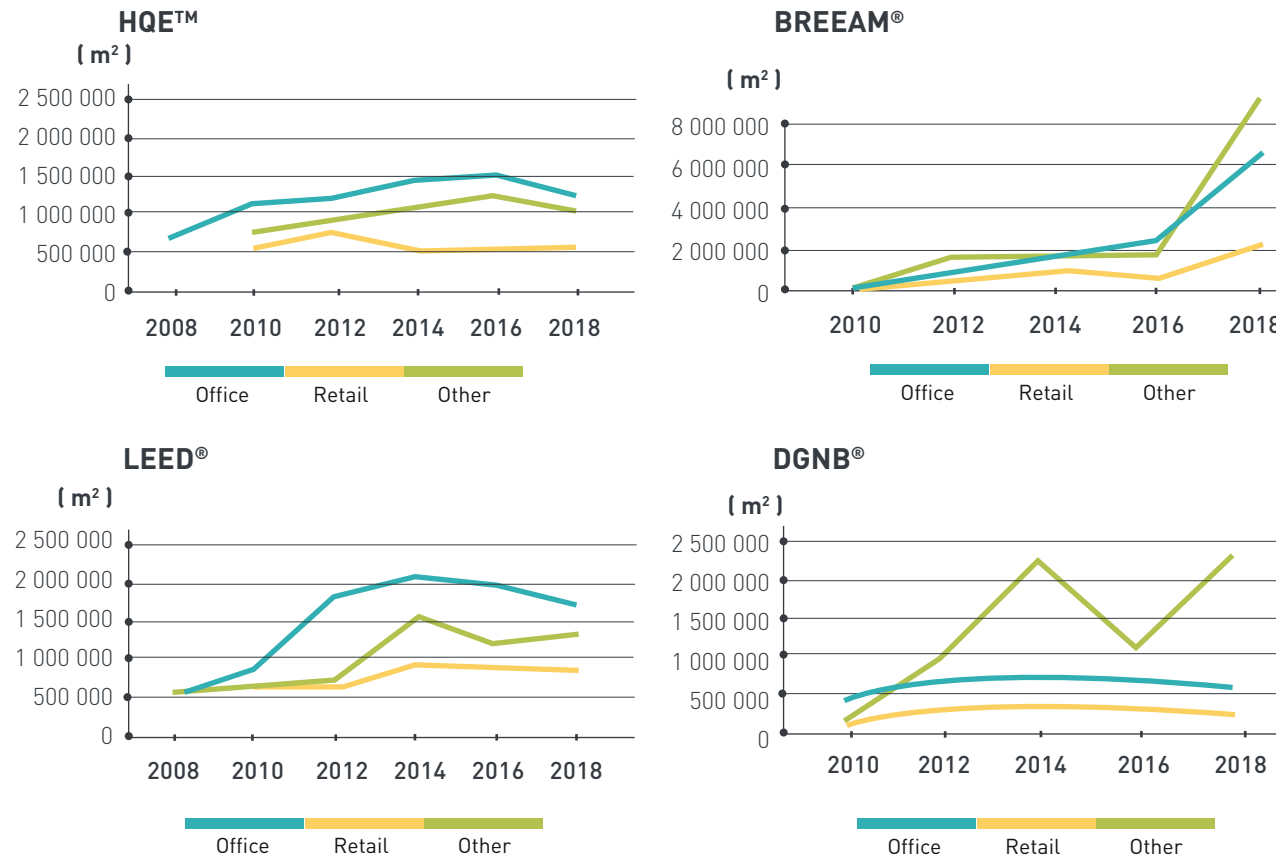


Figure 21 | Breakdown of the floor area for NC+R buildings for HQE™, BREEAM®, LEED® and DGNB® certifications per typology in Europe

“The “office” category is predominant for most certifications. The “other” category is important because of an aggregation of several typologies, as explained in the general methodology. Only NC+R certifications were analysed. Office buildings are predominant in terms of floor area followed by “other”. The trends show an increase of floor area being certified under BREEAM®. Making it a reference in Europe for office building certification.

* From the dataset compiled from all delivered certifications by certification bodies, 20.5% didn't have information on floor area

B | Analysis of delivered certifications' floor area

03. CERTIFICATION LEVEL ANALYSIS

2018
Certified

GEOGRAPHY

TYPES

EU

All

Country

Office

City

Districts

More than 80% of the floor areas that received certifications in 2018 show high levels of performance*

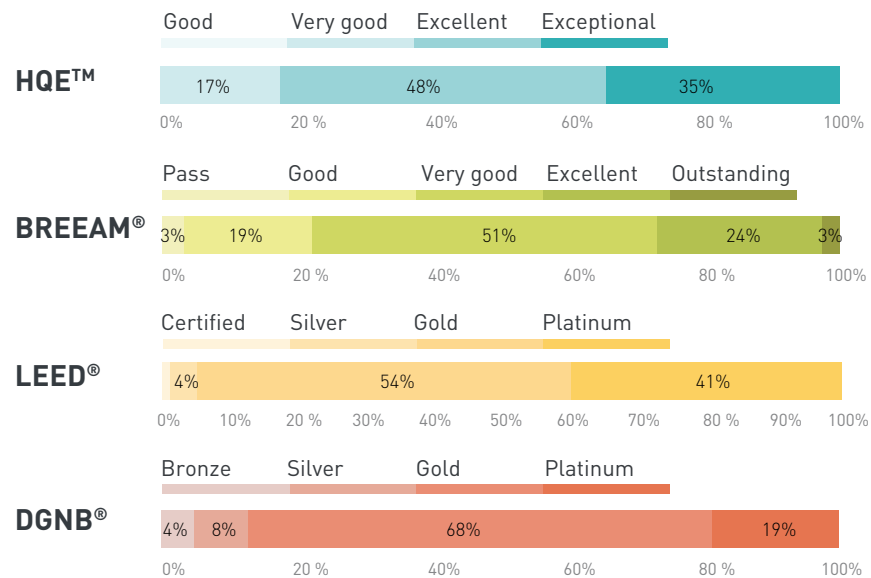


Figure 22 | Breakdown by rating score of certified floor area for HQE™, BREEAM®, LEED® and DGNB® in Europe in 2018

More than 80% of the floor area certified in 2018 had at least a level:
Very Good (BREEAM®)
Excellent (HQE™)
Gold level (LEED® & DGNB®)

This shows that the market players implementing certifications are determined to have a building with high energy and environmental performance.

*From the dataset compiled from all delivered certifications by certification bodies, 20.5% didn't have information on floor area

04. COUNTRY ANALYSIS

2018 Certified	GEOGRAPHY	TYPES
	EU	All
	Country	Office
	City	
	Districts	

BREEAM® dominates the European market in terms of certified floor area in 2018 for office buildings*

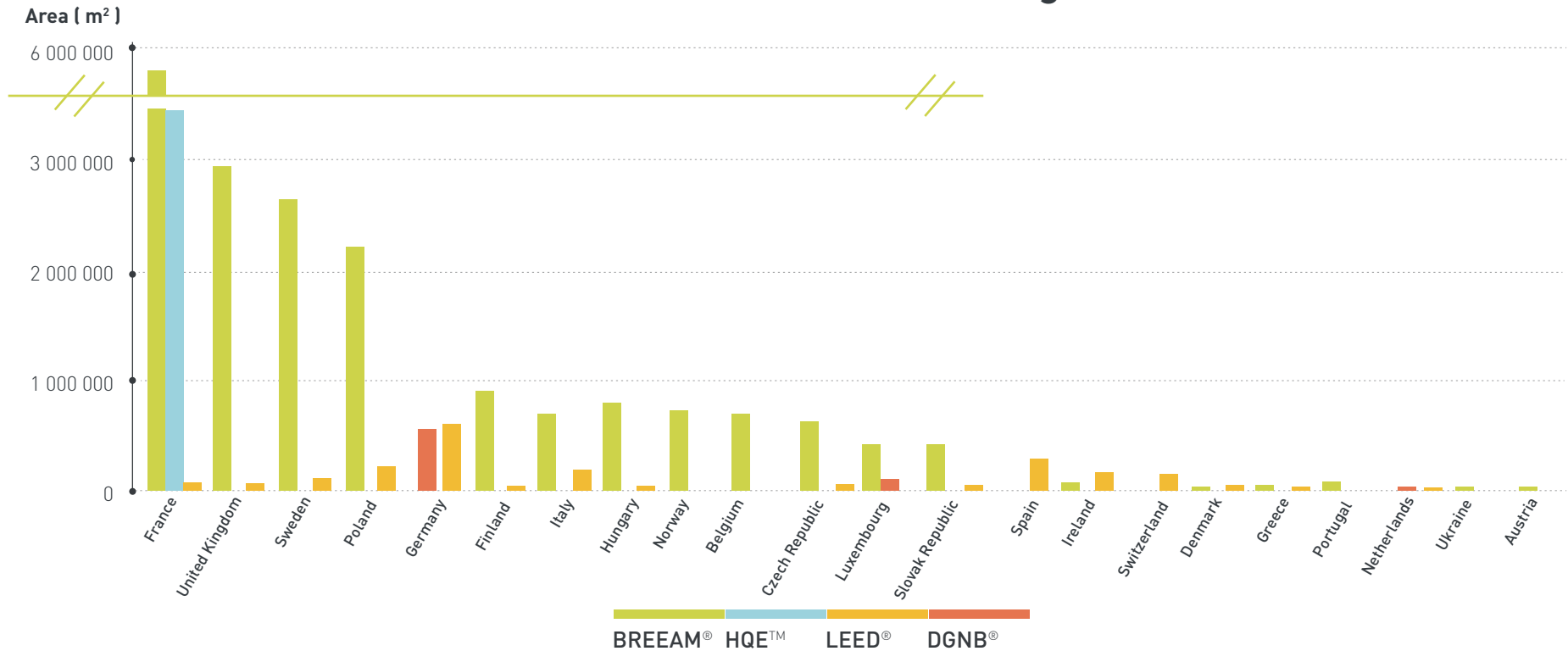


Figure 23 | Breakdown of the number of certified floor area per region for offices in Europe in 2018

“ BREEAM® certification dominated the EU market for certifications delivered in 2018. In Spain, Ireland and Denmark most of the certified floor area was LEED®.

For France, the results differ from Figure 11. In terms of m², BREEAM® certification dominates the French market in 2018 with more than 6,000,000 m² against approximately 3,500,000 m² for HQE™ certification. This is explained by the fact that not all office buildings have double HQE™/BREEAM® certification, that large floor area buildings may have only received a BREEAM® certification and In-Use BREEAM® certifications are updated yearly.

* From the dataset compiled from all certifications delivered by certification bodies 20.5% didn't have information on floor area

B | Analysis of delivered certifications' floor area

05. EUROPEAN ANALYSIS

2018
Certified

GEOGRAPHY

TYPES

EU

All

Country

Office

City

Districts

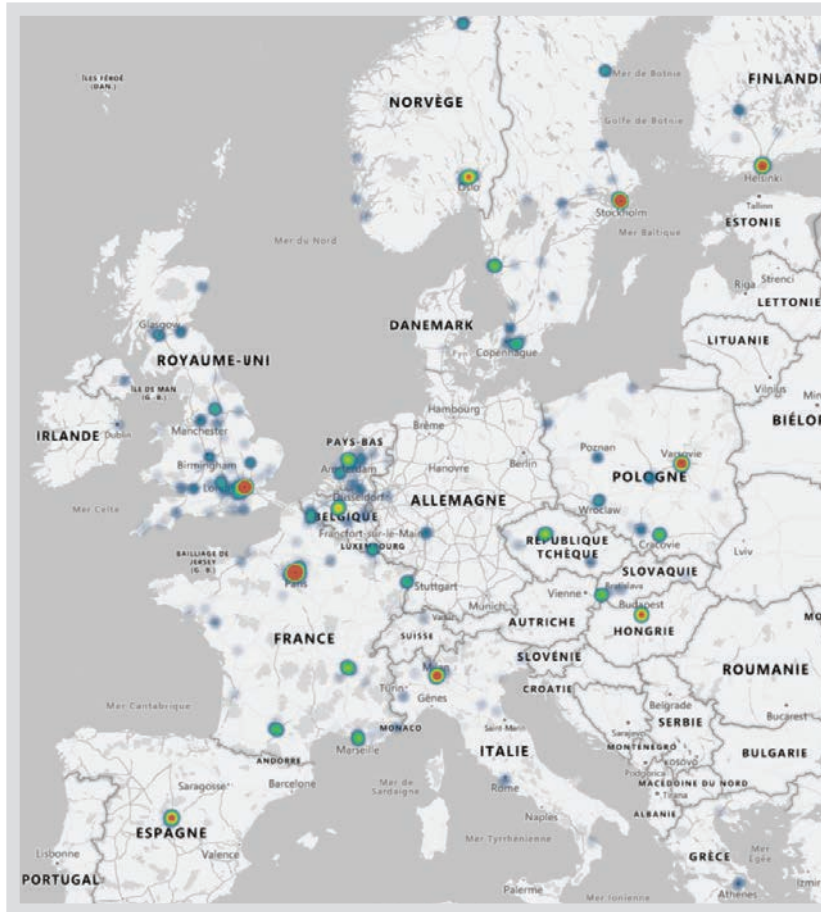
1 900 m² or less  620 000 m² or more

Figure 24 | Breakdown of the certified floor area for offices by intensity on the European territory in 2018

In 2018, the certification market grew everywhere in Europe in terms of certified floor area

“ In 2018, the certification market grew everywhere in Europe in terms of certified m².

Especially, there are intensity areas of certification in terms of floor area in Stockholm, Warsaw, Helsinki, Genoa, Budapest, Madrid and always London and Paris, which both represent a certified area of more than 620 000 m².

However, there is a second layer of medium size intensity in cities like Lyon, Marseille, Frankfurt, Berlin, Rome and Athens where the certified area comes close to 300 000 m².

2018 Certified	GEOGRAPHY	TYPES
	EU	All
	Country	Office
	City	
	Districts	

B | Analysis of delivered certifications' floor area

06. COUNTRY ANALYSIS: FRANCE

2 800 m² or less  930 000 m² or more

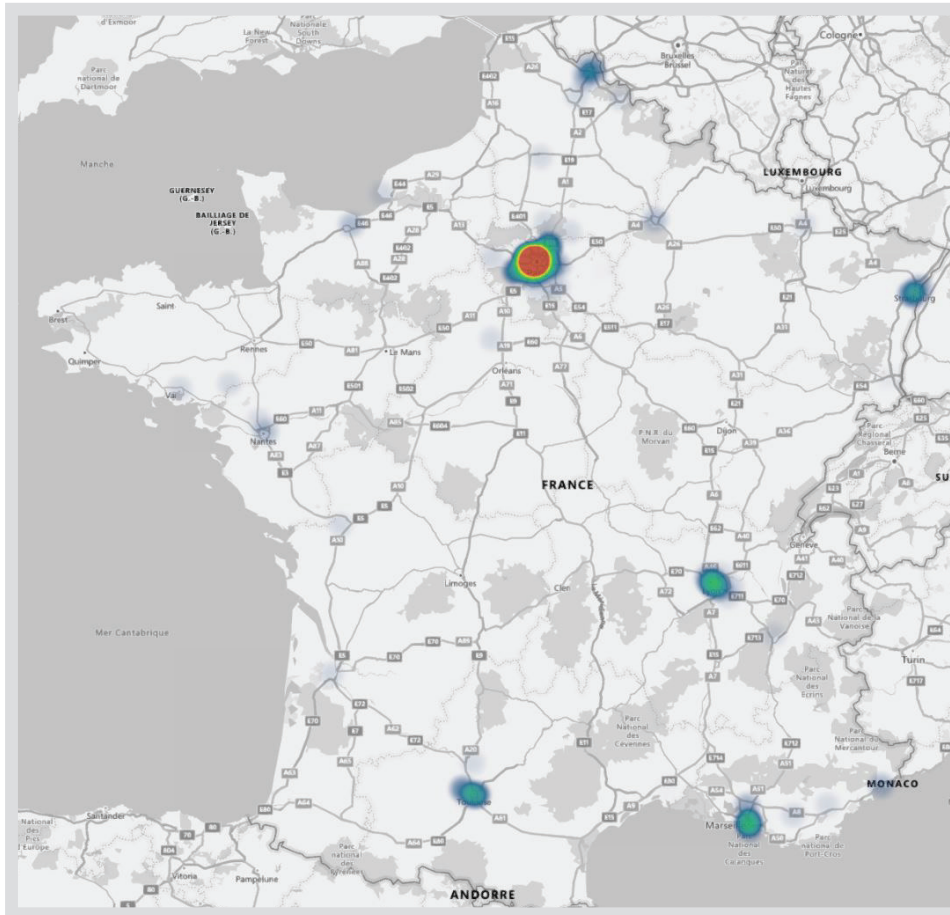


Figure 25 | Breakdown of the certified floor area for offices by intensity in France in 2018

The French market is dominated by Paris and followed by several major cities

“ The French market is marked by a very strong centralisation of economic activities in Paris with more than one million m² of certified offices. This characteristic is reflected in terms of intensity of certified office area in 2018. Then come the cities of Lyon, Toulouse, Marseille, Lille and Strasbourg. Smaller certification areas are then found throughout France.

“ Whether for the capital or the major French cities, it can be noted that the certified areas can concern both historical centres and business districts.

B | Analysis of delivered certifications' floor area

07. DISTRICT ANALYSIS: GREATER PARIS

2018 Certified	GEOGRAPHY	TYPES
	EU	All
	Country	Office
	City	
	Districts	

Greater Paris: a very dynamic market

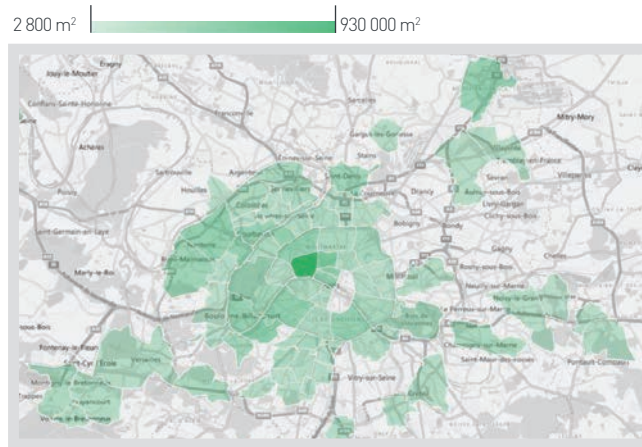


Figure 26 | Breakdown of the intensity of certified floor areas in Greater Paris in 2018

Greater Paris shows a strong certification activity in the capital but also in the first and second rings around Paris, as reflected in Figure 26 and Figure 27. We notice that the 8th district has about 930 000 m² of certified offices. Major business districts and activity centres are developing on the outskirts of Paris, under the impetus of an ambitious policy for Greater Paris.

BREEAM® and HQE™ certifications dominate the market with 60% and 40% respectively.

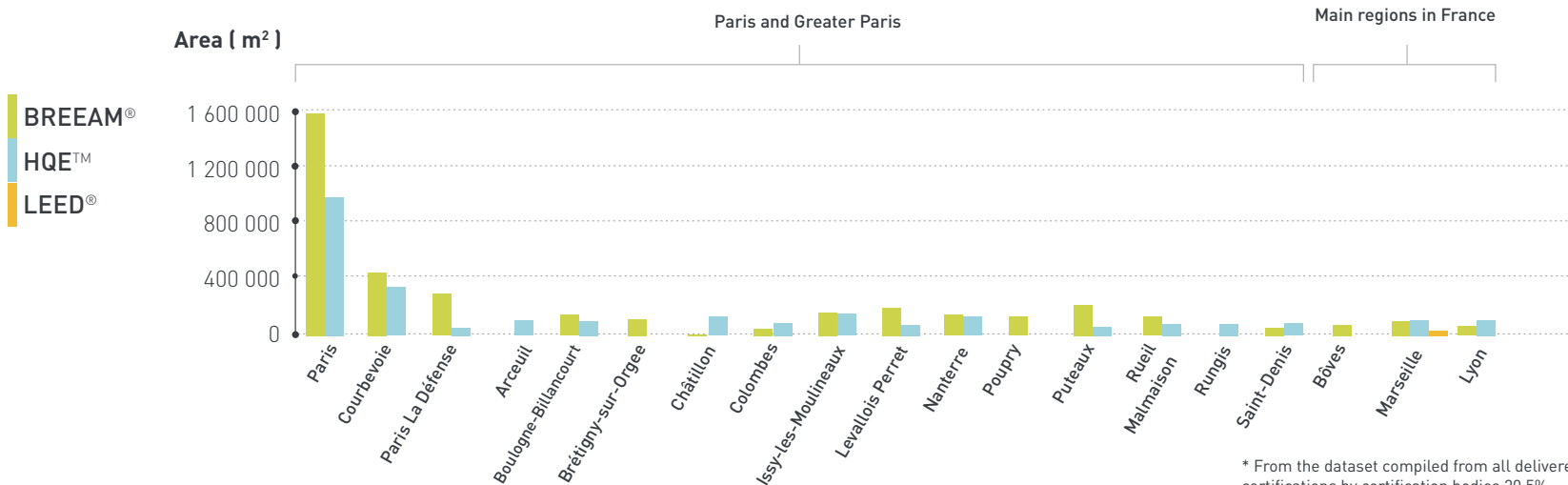


Figure 27 | Breakdown of the certified floor area for offices in France in 2018 (BREEAM®, HQE™ and LEED®)

* From the dataset compiled from all delivered certifications by certification bodies 20.5% didn't have information on floor area

B | Analysis of delivered certifications' floor area

08. COUNTRY ANALYSIS: GERMANY

A market concentrated in Germany's major economic areas in 2018

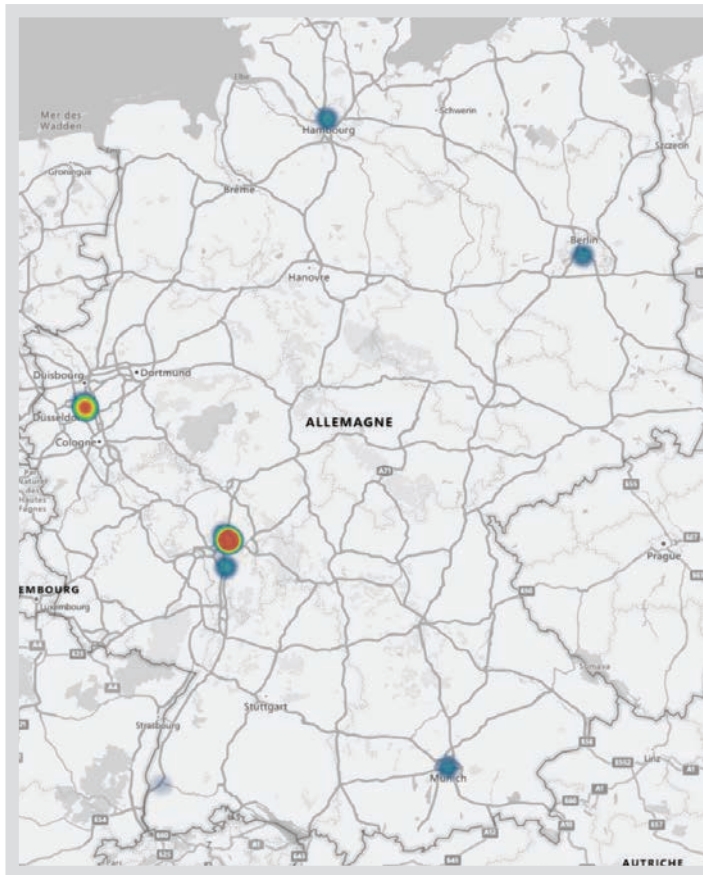
4 800 m² or less | 27 800 m² or more

Figure 28 | Breakdown of the certified floor area for offices by intensity in Germany in 2018

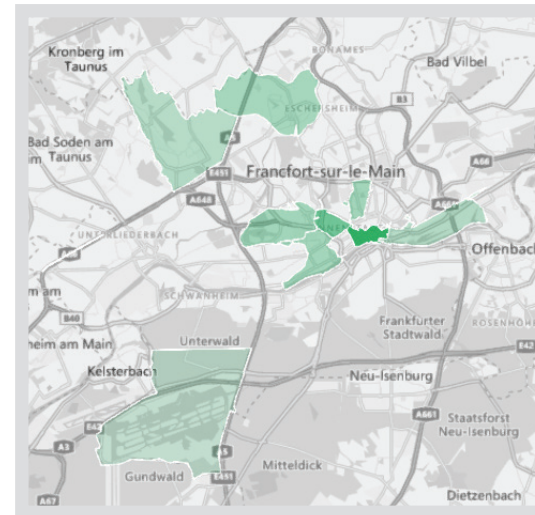
5 393 m² | 31 195 m²

Figure 29 | Breakdown of the intensity of certified floor area in Frankfurt in 2018

Germany has a federal organisation of economic and political activities. That is why certified floor areas are distributed in several major cities across the country (Figure 28) : Hamburg, Berlin, Frankfurt, Munich and Düsseldorf.

In 2018, Frankfurt concentrates the most certification activity in Germany, in terms of certified floor area, with a large presence in the city center but also in the outskirts (industrial zone, airport).

B | Analysis of delivered certifications' floor area

08. COUNTRY ANALYSIS : UNITED-KINGDOM

2018 Certified	GEOGRAPHY	TYPES
	EU	All
	Country	Office
	City	
	Districts	

The British market is almost exclusively occupied by BREEAM® in 2018

4 800 m² or less | 70 300 m² or more

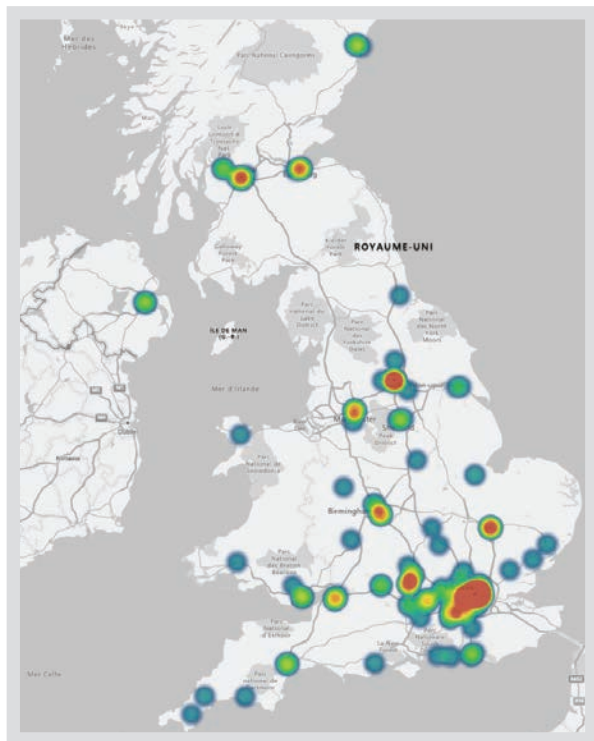


Figure 30 | Breakdown of the certified floor area for offices by intensity in UK in 2018

5 400 m² | 36 700 m²

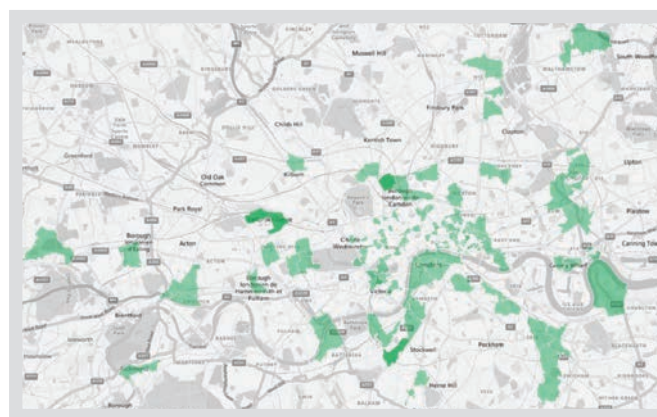


Figure 31 | Breakdown of the intensity of certified floor area in Greater London

“ The British market is almost exclusively occupied by BREEAM® in 2018. There are large certified areas throughout the country, with a marked concentration of intensity in Greater London. The certified floor areas are widely distributed throughout London from Brentford on West to Stratford and Greenwich on East.

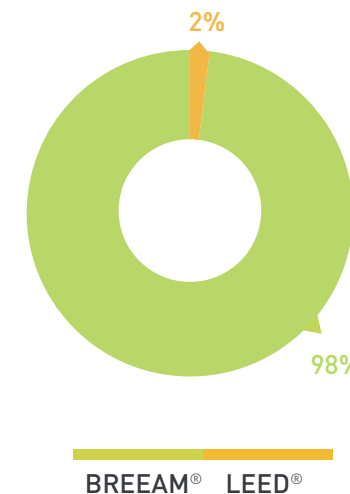
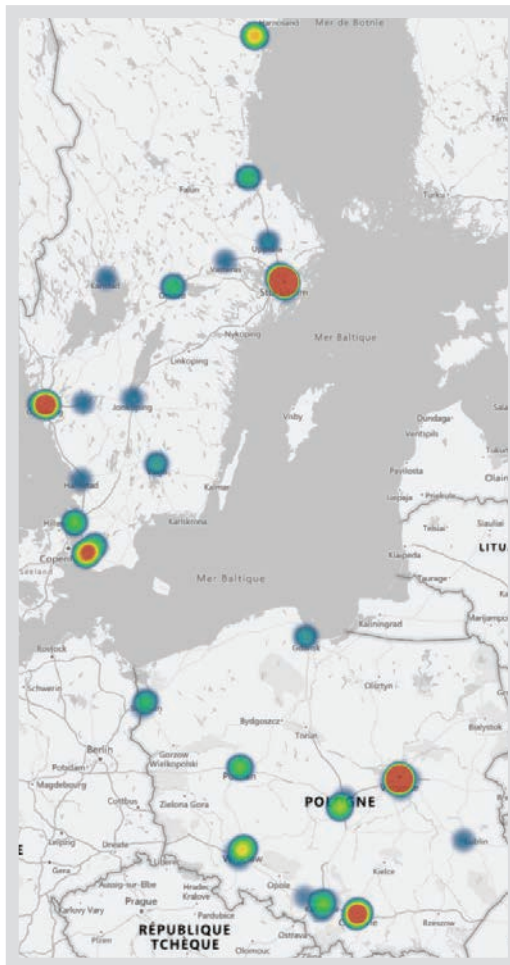


Figure 32 | Breakdown of the BREEAM® and LEED® certified floor area in Greater London for offices in 2018

B | Analysis of delivered certifications' floor area

08. COUNTRY ANALYSIS : SWEDEN AND POLAND

Growing certification centers in Europe: Sweden and Poland in 2018

4 800 m² or less  135 000 m² or more

“ Sweden and Poland represent new and very active certification areas. In particular, there is a very high intensity in terms of m² in Stockholm and Warsaw. However Figure 33 shows that the certification market is found throughout all their territories. Several cities in both countries count about 50 000 m² of certified offices.

Figure 33 | Breakdown of certified floor area for offices by intensity in Sweden and Poland in 2018

Chapter I

ENVIRONMENTAL CERTIFICATION

C | Multi-certification

INTRODUCTION

A building may be certified by several different certification bodies, thus having a «multi-certification». In our study, multi-certification refers to a building that receives a double, triple or more certifications. This trend may reflect different expectations.

First of all, a multi-certification can show the exemplarity to various external stakeholders, by making the effort to respect the standards of a set of certification schemes.

Multi-certification may also have a more practical interest. Indeed, this can allow an international reading of a real estate portfolio, by combining a certification more adapted to the characteristics of a country (for example HQE™ and DGNB®) with an international certification (BREEAM® and LEED®).

METHODOLOGY

To highlight the presence of multi-certification in the database, Green Soluce developed a methodology, based on the following:

In this section, individual buildings with multiple certifications are counted. Multi-certified buildings are identified as those that have the same address across different certification bodies (as a project might be registered with different names). Thus, Green Soluce chooses to base the identification of the uniqueness of a building on the criterion of address.

To calculate the number of certifications that each single building receives, an indicator has been developed, ranging from 1 (receiving a single certification) to 4 (receiving certifications from BREEAM®, HQE™, LEED® and DGNB®).

Several factors limit this method and influence the result of the number of unique buildings identified:

- The presence of Confidential projects does not allow an analysis to be made on the basis of the address, since the information is not communicated.
- There might be errors (spelling, typing) in the name of an address.
- Some projects share the same address. Our methodology can only keep one of these buildings, thus reducing the number of unique buildings.
- More than 50% of certifications from the databases provided by the certification bodies do not have an address.

Although these limitations impact the reality of the results, the figures are still a representation of the interest of multi-certification in the market.

Multi-certification exists in Europe and is particularly present in France with HQE™/BREEAM® dual certification

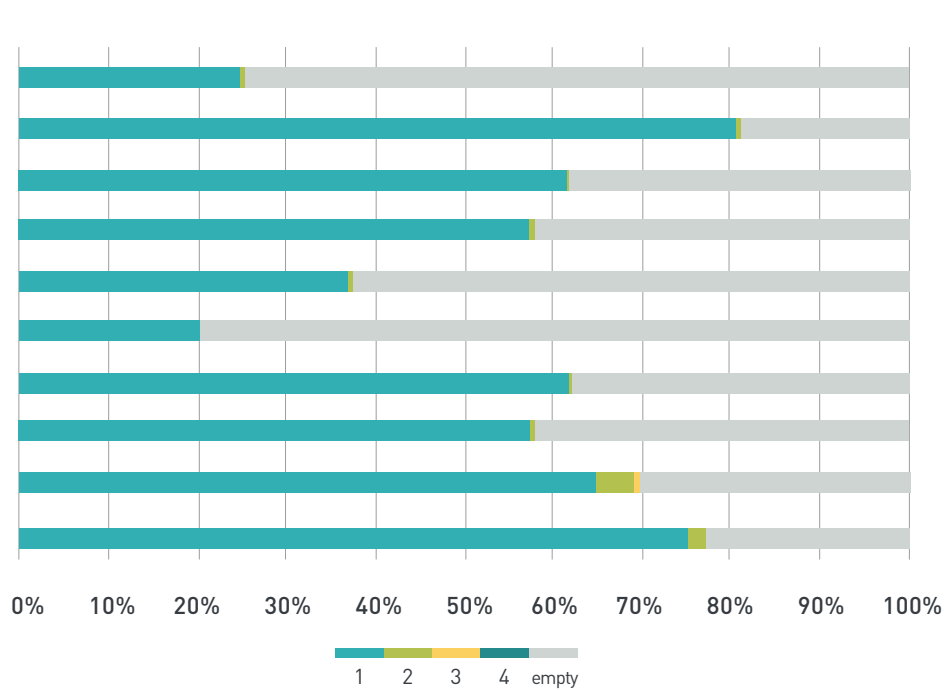


Figure 34 | Breakdown of the number of single or multiple certifications received by a building in Europe until 2018

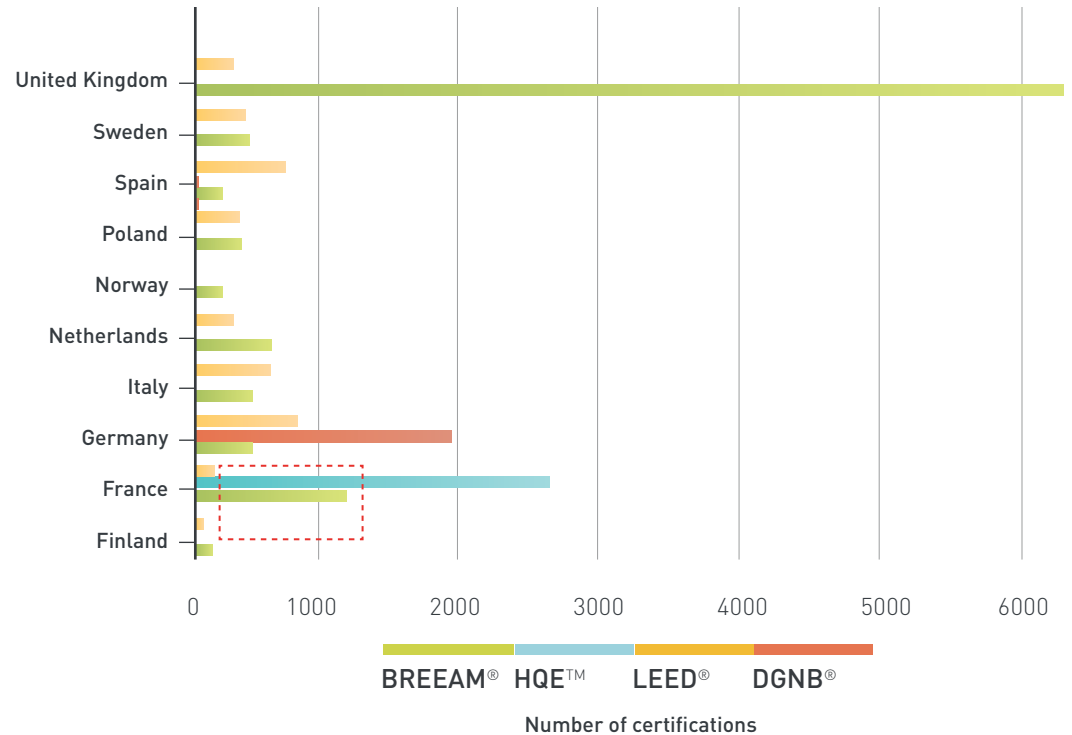


Figure 35 | Presence of the various certification bodies in Europe (in number of certifications) until 2018



Several major points are worth noting even with the limitations mentioned in the methodology:

- Multi-certification exists across Europe. The most significant market for multi-certification is France with many dual HQE™/BREEAM® certifications (figure 34) and even triple certifications. These results can also be interpreted from Figure 35. The other markets for double certification are Finland and Norway.
- The number of buildings with multi-certification is estimated to be higher, as there are more than 50% of certifications with an incomplete address (see figure 34, empty address).



Chapter II

TRENDS FOR OTHER THEMATIC CERTIFICATIONS & LABELS

Methodology

A | Biodiversity, digital & wellbeing certifications

01. BIODIVERSITY

02. DIGITAL

03. WELLBEING

METHODOLOGY

Buildings are not only characterised by their energy performance. They are places of life, work, exchange and activity. They are the scene of a large part of our life in society. Thus, buildings have many other dimensions and uses that can also be certified.

Continuing the previous editions of the Barometer, Chapter II covers other third party certifications which contribute to the improvement of the building stock and cities.

In this regard certification addressing biodiversity, digital connectivity and wellbeing have been included.

- WiredScore and R2S: For buildings connected or optimised via digital tools.
- WELL™ and OsmoZ: For buildings respectful of the wellbeing of its occupants.
- BiodiverCity®: For buildings integrating the benefits of biodiversity.

Green Soluce offers a review of these labels and certifications to understand these new and growing markets. However, it is not possible to carry out a sophisticated trend analysis due to the lack of data.

Biodiversity, digital & wellbeing certifications

01. BIODIVERSITY : BIODIVERCITY® LABEL

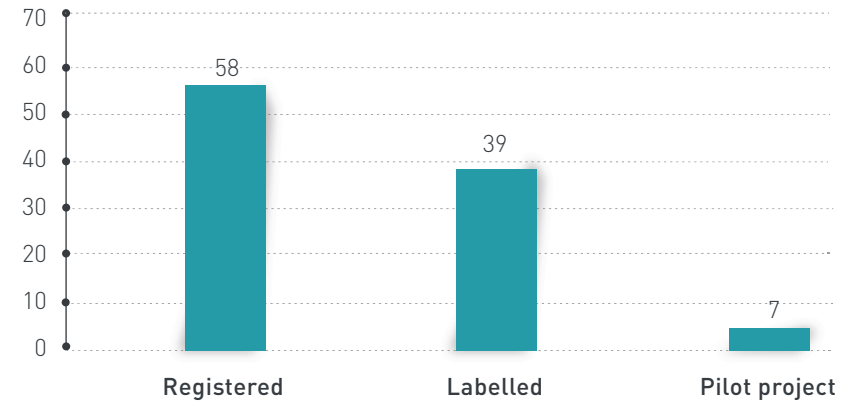


Figure 36 | Breakdown of the BiodiverCity® labelled projects in Europe from 2014 to 2018

“ A recent label in the French market with an objective to grow internationally. In four years, 39 projects have been certified and 58 have been registered. The number of registered BiodiverCity® projects shows that the integration of biodiversity in the real estate sector is gradually gaining momentum.

Pilot projects labelled for 2014 (7)

- **ABBB** - Seine Musicale Ile Seguin - PPP Tempo
- **ABBC** - 55 rue Amsterdam - Gecina
- **CCAB** - Ecoquartier Eikenott - Losinger Maradi
- **ACAB** - Challenger - Bouygues Construction
- **ABBB** - HUB Logistique et siège régional Roissy - Bollere Logistics
- **ABBB** - Néo-C CRETEIL - 600 logements et commerces - Bouygues Immobilier
- **ABBC** - Siège Véolia - Aubervilliers - Icade

Pilot projects labelled for 2015 (4)

- **ACBA** - Siège régional NANTES - Bollere-Logistics
- **BABC** - Centre Logistique Puisieux Pontoise - Panhard Développement
- **ABBC** - Campus Sanofi Val De Brieves - Macsf
- **ABAA** - Eco Quartier Font-Pré Toulon - Bouygues Immobilier

02. DIGITAL : WIREScore CERTIFICATION

The UK presents the most certifications followed by France and Germany

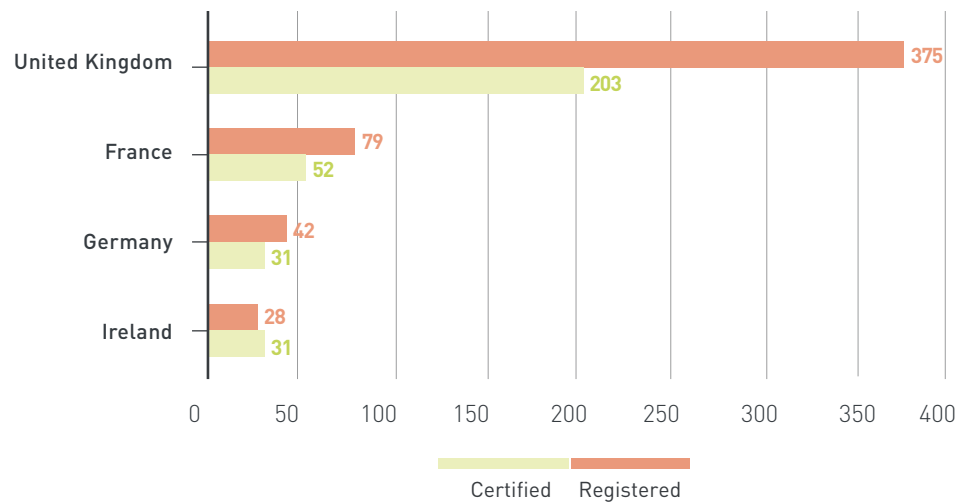


Figure 37 | Breakdown of the certified and registered WiredScore projects in Europe until 2018

“ Among these four countries, the UK is well in the lead with 375 registered projects and 203 certified, followed by France with 79 and 52 projects respectively.

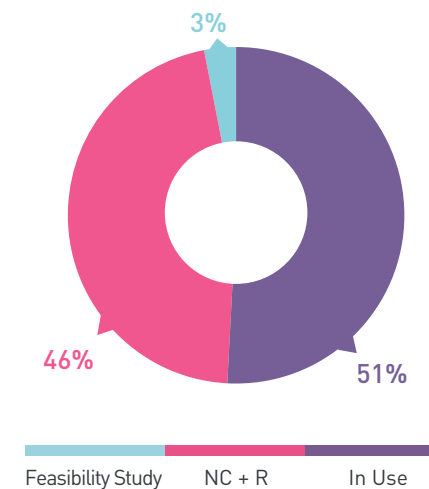


Figure 39 | Breakdown of the type of project in Europe until 2018

“ Certifications are almost equally distributed for WiredScore projects for In Use and NC+R types. In fact 51% of the certified WiredScore projects are recorded In Use and 46% of them in NC+R.

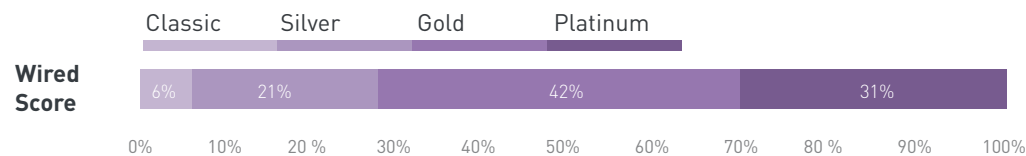


Figure 38 | Breakdown by rating score for WiredScore certification in Europe until 2018

“ 31% of the WiredScore certified projects are classified as platinum and 42% as gold. Only a few projects obtain the “classic” certification.

02. DIGITAL : R2S LABEL

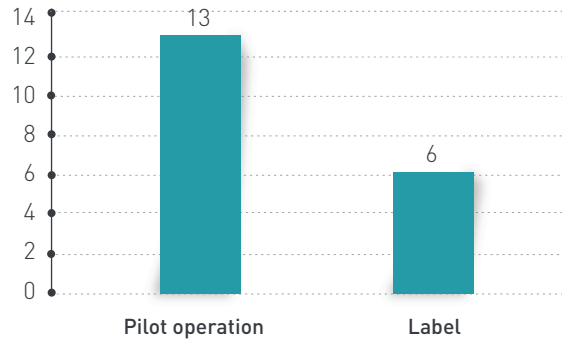


Figure 40 | Overview of the number of R2S-labelled projects in Europe until 2018



13 pilot operations have been set up. Based on this experience, 6 projects have already been approved

PROJECT OWNERS	BUILDING NAME	CITY	SURFACE (m ²)
ACE Promotion - Groupe Altarea Cogedim	RICHELIEU	PARIS	33 000
Allianz Real Estate France	16 George V	PARIS	6 613
BGA Transactiond	RIVERSIDE	TOULOUSE	11 300
Bouygues Bâtiment IDF	Futur Siège BBCSO Bordeaux	MERIGNAC	4 000
Eiffage immobilier méditerranée	Eco-quartier smartseille - Ilot B	MARSEILLE	6 160
Icade SA	SmartDesk Tour PB5	PUTEAUX	650
Icade SA	Open	ISSY-LES-MOULINEAUX	10 838
Orléans Métropole	Incubateur Numérique LAB'O	ORLEANS	17 259
Poste Immo	Village La Poste - Nantes	NANTES	5 000
SCI Hebert - Les Groupes	L'archipel Siège Vinci	NANTERRES	7 400
SNC Rueil les Fontaines	Rueil les Fontaines	RUEIL - MALMAISON	42 311
TDF Telediffusion de France	Campus TDF	LES LILAS	5 700
DUO PARIS	Tours DUO	PARIS	Pas de donnée

03. WELLBEING: OSMOZ® LABEL

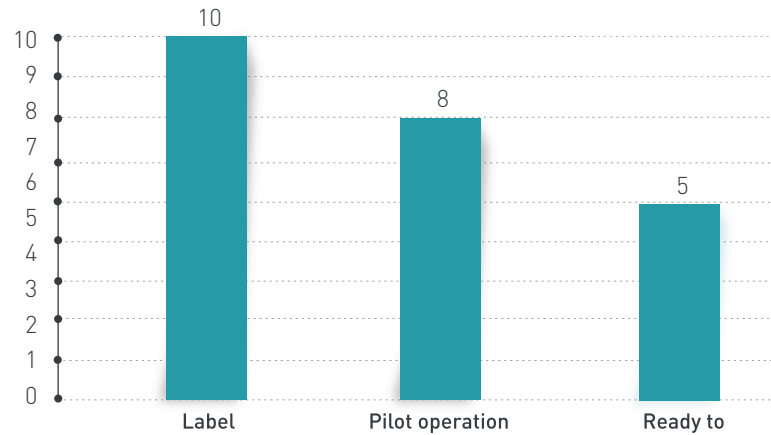


Figure 41 | Overview of the number of OsmoZ®-labelled projects in Europe until 2018

“ «Ready to» makes it possible to directly promote the results already certified in the HQE™, Accessibility and R2S certifications. This particularly in terms of comfort, health and quality of use. Gateways can be requested and promote approaches in favour of quality of life.

PROJECT OWNERS	BUILDING NAME	CITY	SURFACE (m²)
Icade	Open	ISSY-LES-MOULINEAUX	9 064
MAIF	Boo	NIORT	550
Linkcity Sud-Est & Bouygues Bâtiment Sud-Est	Le Virage	MARSEILLE	2 800
Colliers International France	Siège Social	LEVALLOIS PERRET	2 500
GA Smart Building	Agua - Siège Social	TOULOUSE	3 300
Carrefour	Campus Massy	MASSY	85 000
ARP Astrance	9 Percier	PARIS	750
Essilor International	Centre Innovation Essilor	CRETEIL	Pas de donnée

Biodiversity, digital & wellbeing certifications

04. WELLBEING: THE WELL™ CERTIFICATION

France is the country with the most certified projects

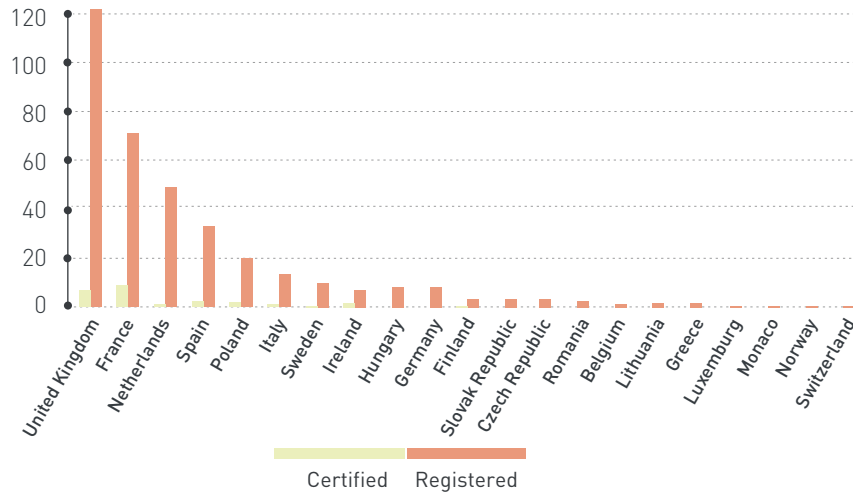


Figure 42 | Breakdown of the certified and registered WELL™ projects in Europe until 2018

“ Although the UK has by far the most projects registered, France is the country with the most certified projects. It is also noted that the Netherlands, Spain and Poland have a significant number of registered projects.

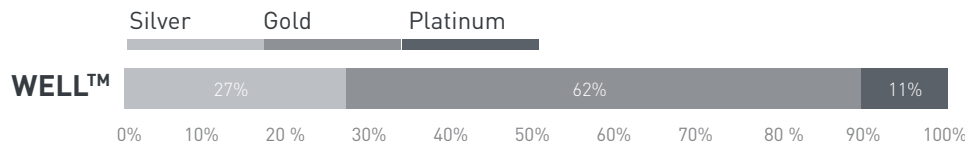


Figure 43 | Breakdown of the score of WELL™-certified projects in Europe until 2018

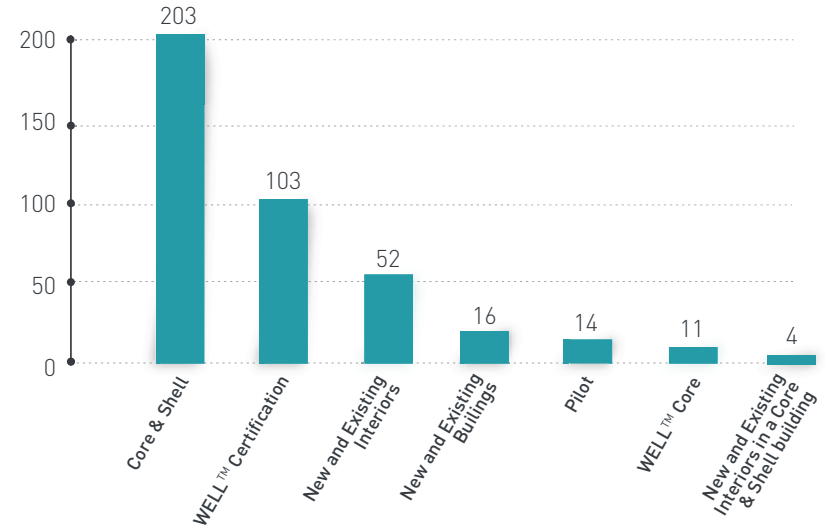


Figure 44 | Breakdown of WELL™-certified projects in Europe until 2018 by project type

“ Core & Shell is the most pursued certification. The Core and Shell project type addresses the building structure, window locations and glazing, building proportions, heating, cooling and ventilation systems, and water quality. This project type also encourages consideration of the site in relation to amenities and opportunities for wellness.

“ 62% of projects are labelled with the gold level.

Discover The Green Building platform



Understand

major green building certifications and how Saint-Gobain's solutions contribute in achieving them.



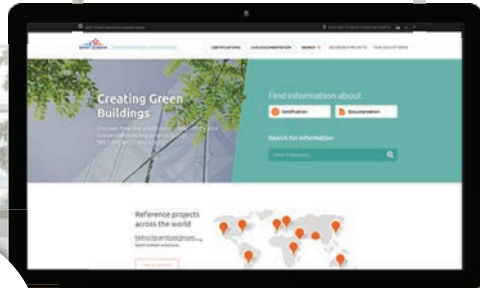
Download

documentation for the certification targeted!



Get inspired

with iconic referenced projects from all over the world with Saint-Gobain's solutions.



Discover
the
platform

Any question?

sustainable.construction@saint-gobain.com

Saint-Gobain designs, manufactures and distributes materials and solutions which are key ingredients in the wellbeing of each of us and the future of all. They can be found in buildings, transportation, infrastructure and in many industrial applications.



Mattias Tingvall

Vice President of the new Business Unit Energy Solutions, Vattenfall

Vattenfall is one of the leading energy producer and supplier in Europe. In order to achieve its ambition to make fossil free living possible within one generation, Vattenfall is increasing its investments into renewable energy, that represents one third of its generation to date. In addition, Vattenfall actively contributes to reducing CO2 emissions by partnering with other industrial sectors to develop innovative low carbon solutions. Besides, integrated and decentralised energy solutions are a strategic focal point for Vattenfall.

Managed District Energy (branded as "InHouse" in Sweden)

In 2018, Vattenfall has launched a new business unit that focuses on providing customised decentralised and integrated energy solutions to new building areas, real estate owners and housing associations. We help customers to develop fossil free buildings by offering product and service solutions for sustainable and efficient energy production and consumption. Indeed, we respond to their needs of decentralised electricity by designing, installing and operating tailored energy solutions. Vattenfall offers integrated energy solutions and single decentral technologies. That means Heating, Electricity, Storage, EV charging, IMD, Sensors and Optimization. This Business Unit is currently working in Sweden, Germany and the United Kingdom.

Vattenfall Press Office: press@vattenfall.com

Video: <https://www.youtube.com/watch?v=9LB5JHnrLoo>



INTERVIEW THOUGHT LEADER



Ann-Marie Aguilar

Director of Operations, EMEA, International WELL™ Building Institute™

“ We continue to champion the agenda for better buildings and communities that help people thrive. ”

I WBI is a public benefit corporation whose mission is to improve human health and wellbeing in buildings. Ann Marie Aguilar has been in charge of the operations in Europe since April 2017.

Green Soluce: How do you see the evolution of WELL™ certification in Europe?

Ann Marie Aguilar: The rapid adoption of the WELL™ Building Standard™ (WELL™) worldwide demonstrates the demand for buildings that support human health and well-being. Since the launch of WELL™ in 2014, more than 3,800 projects encompassing 443 million square feet (41 million square meters) of real estate have been registered or certified through WELL™ across 58 countries. We're working on new ways to connect our European WELL™ community and facilitate local market transformation through new programs such as WELL™ Portfolio to help us all move farther, faster, together.

Green Soluce: Any recommendations for projects aiming for WELL™ certification?

AMA: Be open to measuring. Collect feedback from people in the building so you know where you currently stand. Bring diverse stakeholders together and discuss your organization's health and wellbeing objectives. Understand the basic preconditions and how your project might respond to them. Speak to one of the 500 WELL APs across Europe. While this isn't required, projects who consult with WELL™ APs are often the most successful.

Green Soluce: Can you share an example of the health impact of a certified building?

AMA: As just one example, following the dual WELL™ and BREEAM® certifications of its new workplace in London, Landsec surveyed its employees: 88% believe their new office design enables them to work productively, a 20% increase from the previous office.



INTERVIEW THOUGHT LEADER



Frédéric Motta

Executive Director France at WiredScore

“ We are increasingly focusing on the connectivity experience of tenants ”

WiredScore is the international scheme that rates and provides transparency on the infrastructure, connectivity and technological capacity of office buildings. Frédéric Motta is the Executive Director at WiredScore France.

Green Soluce: How do you see the evolution of WiredScore certification in Europe?

Frédéric Motta: WiredScore's focus is on three key areas. We will expand from our base of five European countries. We will look to introduce other certifications, like our residential rating scheme in the UK. Finally, we will continue to update our scorecard to ensure we are best placed to help landlords navigate the complicated world of connectivity.

Green Soluce: Any recommendations for projects aiming for WiredScore certification?

FM: For developments, we always advise landlords to engage with WiredScore as early as possible in their planning phases.

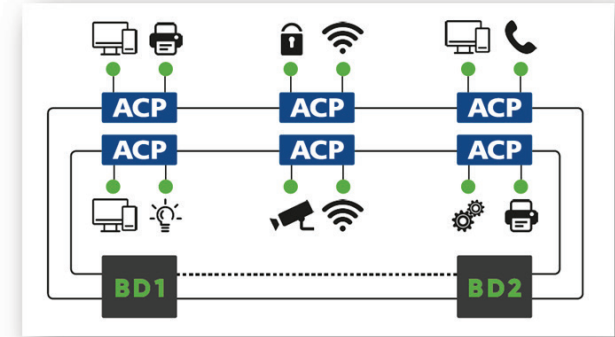
For buildings that are occupied, it is always possible to improve the digital experience for your tenants - even old buildings can be refurbished to improve the quality of connectivity.

Green Soluce: What is the next phase in the improvement of WiredScore label in Europe?


FM: We are continuously building out our R&D function and revising our scorecard to ensure it is informed by the 50 million square meters of office space across three continents that we have certified at WiredScore. Leveraging this information and harnessing the depth of our engagement with the telecoms industry helps us ensure we are best placed to truly help landlords understand and improve their buildings' infrastructure.


Independent and driven by **sustainable IT solutions**, InGeTel-BET has been a **specialist** in the domain of **telecommunications engineering** for over 20 years. Conscientious of the important role IT plays in the **ecological sustainability** of buildings, our years of R&D have led us to the development of the patented **FTTACP Cabling Model** known as **EcoFlex'IT™**

Our missions in **IT Project Management** and **Project Management Assistance** allow our clients to optimize costs, economize **50%** of their IT network **energy consumption** and significantly **reduce their carbon footprint**.



Case Study #1 – Ecole Normale Supérieure; Paris - Saclay, Campus 63,000 m² indoor, 10,000m² outdoor

 Modular connectivity in learning and laboratory settings, with high speed connections.

 Economy of 336 kms of copper cabling, = 63 tons of CO2 not released into the atmosphere.

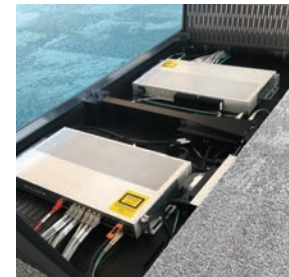



école normale supérieure paris-saclay université PARIS-SACLAY


Among the many reasons given by ENS for choosing EcoFlex'IT™: Flexibility, recovered floor space, lower energy consumption, no need for IT specific air-conditioning...

According to the Information Systems Director, Sabrina LOUISON FRANCOIS, **“Given our current climate situation, not choosing EcoFlex'IT™ would have been unreasonable, even stupid!”**

Case Study #2 – SoLocal; Angoulême, tertiary building, 4,000m²



 Deployment 3x faster than standard models. Easy reorganization of workspaces with no down time.

 Space savings, decentralized connection points means connection nodes are integrated into workspaces, not tech closets.

solocal

Connection nodes are integrated into the floors for total discretion. The system is completely silent and based entirely on international standards: Standardized technology = no specific training costs!



Digital savvy and expert in IoT/Cloud, Birdz gathers and values hundreds of million of environmental data measures every day to **help cities, buildings and commercial companies reduce their energy and environmental footprint.**

We act as a **digital booster** for our clients improving together the way we **work, behave** and **share**. Our mission is to become a worldwide **leader** in **Environmental IoT**, enhancing and sharing ecofriendly usages for smarter citizenship & cities.



SMART MESURES FOR SMART COMMUNITIES



Case Study #1 - Groupe Perial, Lyon (FR)

- Remote monitoring & Notification of Energy/Water footprint
- Full packaged digital service with IoT sensors connected to Birdz's Cloud Platform and decision-making dashboards

ISO 50001
Ready

20% energy
savings

On quarterly bills



« Monitoring, under Portal view, Water, Electricity and Gas consumptions is a major booster for building operation management. Birdz gives us capacity to better manage performance and sensitize customers regarding habits and environmental footprint.»

Cédric Nicard, Responsable du Développement Durable groupe PERIAL.

Case Study #2 – Veolia, Hôtel La Tour Noire, Brussels (BE)

- In partnership with Veolia BE, delivery of a Remote monitoring & Notification Offer for reduction of Energy/Water footprint, with ambient temperature & air quality for host comfort control
- Full packaged digital service with IoT sensors connected to Birdz's Cloud Platform

ISO 50001
& Energy
Performance
Contract (EPC)

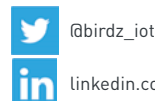
10 years
Savings
contract

Electricity (17%)
Water (16%)



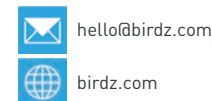
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hello@birdz.com

birdz.com





<http://www.diagnostic-electromagnetique.com>

ELECTROMAGNETIC ENVIRONMENT STUDY OFFICE



Accréditation n° 1-6435
Portée disponible sur
www.cofrac.fr



■ EMC (ElectroMagnetic Compatibility) study on the Biology-Pharmacy-Chemistry pole of Paris-Sud University - METRO & IDEEV Building

- Predictions of electromagnetic fields radiated on sensitive surfaces
- Analyses of electromagnetic susceptibility of implemented equipment
- Studies of possible interactions between equipment
- Recommendations for limiting EMC impact
- Implementation of electromagnetic hardening techniques



■ HQE electromagnetic study and radio connectivity mapping on the Palais de Justice – Paris - 160 meters high (40 floors), 108 000m² floor area, 61 000m² office area

- Evaluation of Mobile Coverage & Quality of Service
- Qualification of connectivity criteria
- Qualification of the jamming system
- Electromagnetic study according to the HQE Certivea's Specifications

■ **Evaluation of Mobile Coverage & Quality of Service**
The mobile coverage study is carried out by measuring "Radio" carrier waves of the GSM, UMTS, LTE, 3G & 4G type. The waves are analyzed in the frequency bands allocated to the four telephone operators Bouygues, SFR, Free and Orange.

- **Qualification of the overall connectivity criteria**
 - The rate of perfect voice quality communications
 - The rate of text message received
 - Flow rate, downloading and uploading files
 - The rate of loading web pages
 - The rate of perfect quality videos viewed.

■ Electromagnetic study allowing to reach the level A on the subject of the electromagnetic waves according to Certivea Specification 2016

- Identification of the sources of electromagnetic waves inside the office building emitted from low frequency "Energy" sources and "Telecommunication" sources according to the classification of electromagnetic sources given by the INRS
- Support to the project management, architectural design and technical measures to minimize the effects of electromagnetic radiation on the public and employees
- Final estimation of the level of exposure to electromagnetic fields (studies / simulations and / or measurements).





Chapter III

GREEN BUILDING INSIGHTS

Identifying the trends
of the certifications
across different regions

Methodology

A | Respondents' information

- 01. RESPONDENTS' DEMOGRAPHICS
 - 02. STAKEHOLDER INVOLVEMENT IN THE CERTIFICATION MARKET
-

B | Evolution of green building schemes

- 01. PROJECTS UNDER A GREEN BUILDING SCHEME OR A SIMILAR SCHEME
 - 02. PURSUED GREEN BUILDING ASSESSMENT SCHEMES
 - 03. IMPACT ON CONSTRUCTION COSTS
-

C | Certification trends

- 01. DRIVERS FOR CERTIFICATION
 - 02. BENEFITS EXPECTED FROM A CERTIFICATION
 - 03. CHALLENGES TO THE PROMOTION OF GREEN BUILDINGS BY CATEGORY OF RESPONDENTS
-

D | Sources of information about green products and services

- 01. PRODUCTS AND SERVICES INSTALLED FOR GREEN BUILDINGS

METHODOLOGY

This part is dedicated to stakeholders' point of view on the drivers and trends for green building approaches in different regions across the globe.

This chapter complements the previous sections of the Sustainability Certification Barometer. It studies the value, the economic and ecological impact of green buildings and of sustainability certifications (BREEAM®, LEED®, HQE™ and DGNB®) for new and existing buildings.

In this chapter, the study aims to identify the relation between stakeholders and the evolution of drivers of the green building and certification market. The issue in the perception of construction cost in relation to certification is also shown.

The following pages seek to highlight the social and environmental factors that encourage the development of green projects and the challenges faced by stakeholders.

Chapter III Section D focuses on the sources of information that players use to find out about the products and services installed in green building projects.

The Survey was conducted to achieve the following objectives:

- 1- Identify drivers, challenges and benefits to promote green building projects
- 2- Identify the trends of the certifications and the evolution of construction cost
- 3- Identify which stakeholders require and propose green building projects
- 4- Identify which sources of information are used to find details about green building products

The survey was conducted between February and May 2019. A questionnaire was sent by email to several certification bodies, companies and professional associations. These entities forwarded the survey to their membership.

The study is based on 80 responses in total from architects, engineers, real estate developers, consultants, investors and suppliers. Respondents were mainly from Europe.

The answers from respondents were aggregated to maintain the confidentiality in terms of identity, and affiliation. The limitation of this survey is related to the number of people who responded. This section will evolve in the next editions.

01 . DEMOGRAPHICS

Country of origin

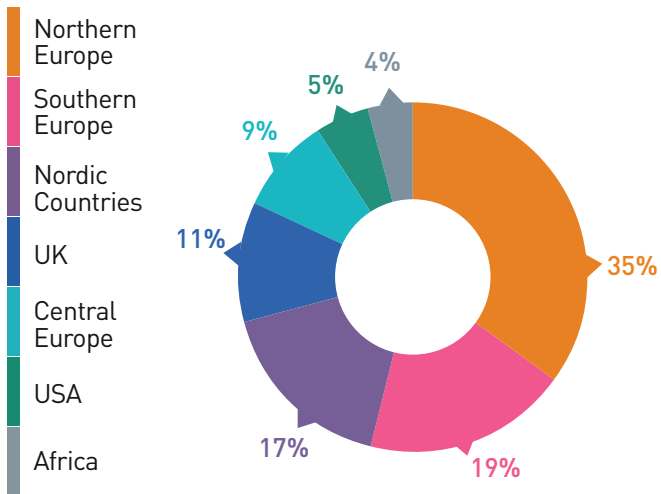


Figure 45 | Breakdown of the interviewees' regions of origin

“ 91% of the interviewees are from Europe. A small sample comes from the USA (5%) and Africa (4%). ”

Business sector

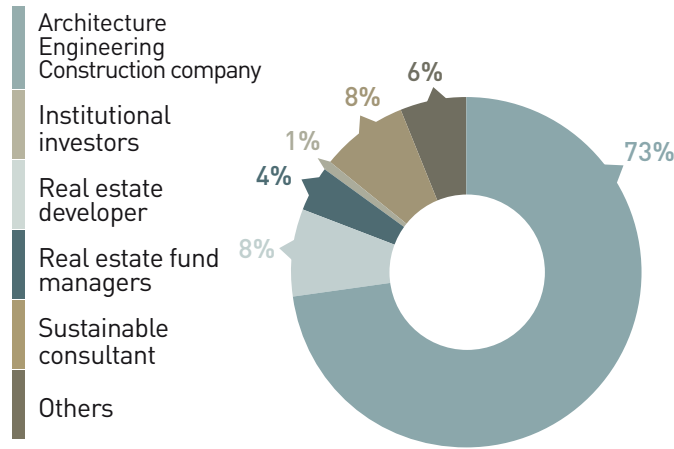


Figure 46 | Breakdown of the interviewees' business sector

(Other: supplier, housing regeneration, builder administration, NGO)

“ 73% of the people interviewed for the survey come from the architecture, engineering and construction sector. Although investors represent only a small percentage of interviewees (1%), the survey shows that they are interested in the certification market. ”

Implementation of green practices

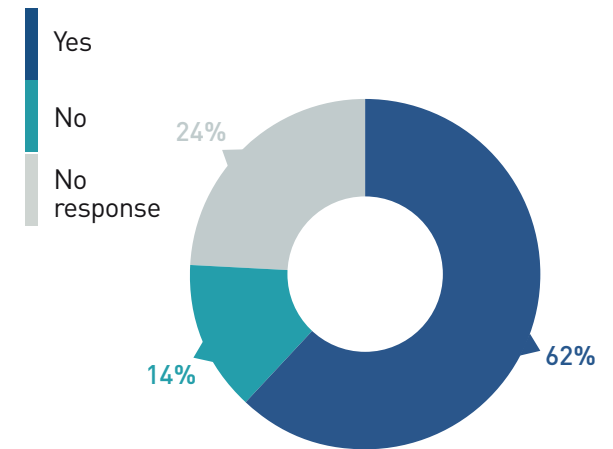


Figure 47 | Breakdown of the existence of policies based on green building development in the company of the interviewees.

“ 62% of the companies that responded to our survey come from countries that set up policies that encourage the development of green buildings. ”

02. STAKEHOLDER INVOLVEMENT IN THE CERTIFICATION MARKET

For most stakeholders, owners and developers are the ones most concerned by a certification

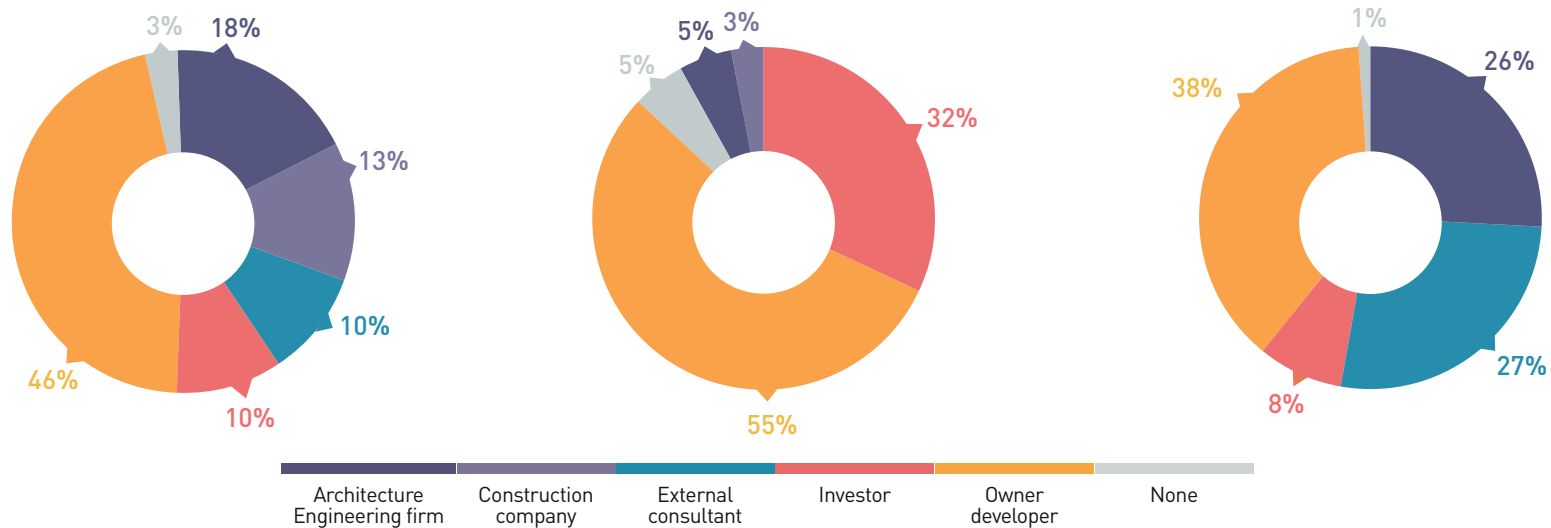


Figure 48 | Respondents' perception on who is the stakeholder most concerned by a certification

Figure 49 | Respondents' perception on who is the stakeholder that most requires the certification

Figure 50 | Respondents' perception on who is the stakeholder that most proposes the certification

“ 46% of the respondents think that the owners and developers are the most concerned about certification followed by architecture and engineering firms at 18%.

“ Among respondents, 55% think that the owners and developers require the certification, and 32% consider that the investors require the certification.

“ According to the respondents, 38% think that owners and developers are the ones that propose certification, followed by the external consultants at 27%.

01. PROJECTS UNDER A GREEN BUILDING SCHEME OR A SIMILAR SCHEME

Over 40% of projects are under a green building scheme or a similar methodology in 2018

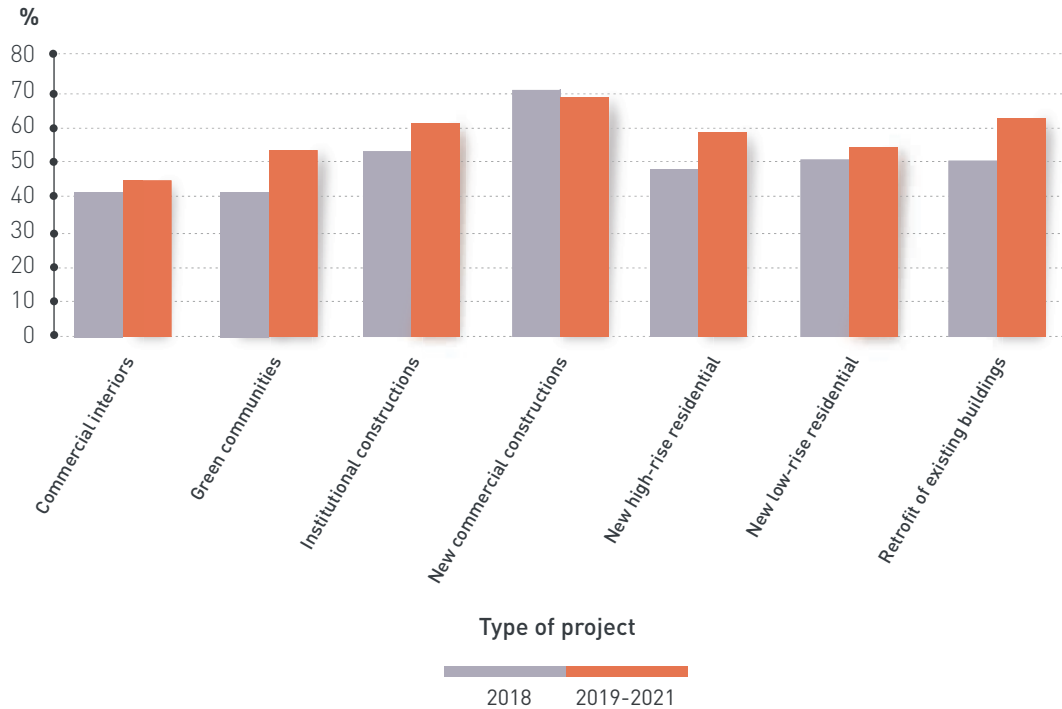


Figure 51 | Comparison of the percentage of projects carried out under an environmental certification or similar methodology in 2018 versus the evolution for the next 3 years (2019-2021)

Question Asked

Which types of project aiming for an environmental certification have you carried out in 2018 and with what share?

How would you estimate the evolution of this share for the next 3 years?



“ At least 40% of projects of all types were carried out under certification in 2018, with a predominance of new commercial constructions. The evolution of the new commercial constructions remains then stable. All types of projects aim to increase between 3% to 10% the number of projects under certifications over the next 3 years.

B | Evolution of green building schemes

02. PURSUED GREEN BUILDING ASSESSMENT SCHEMES

BREEAM®, **LEED®** and **HQE™** represent the majority of the market share for pursued certifications and labels

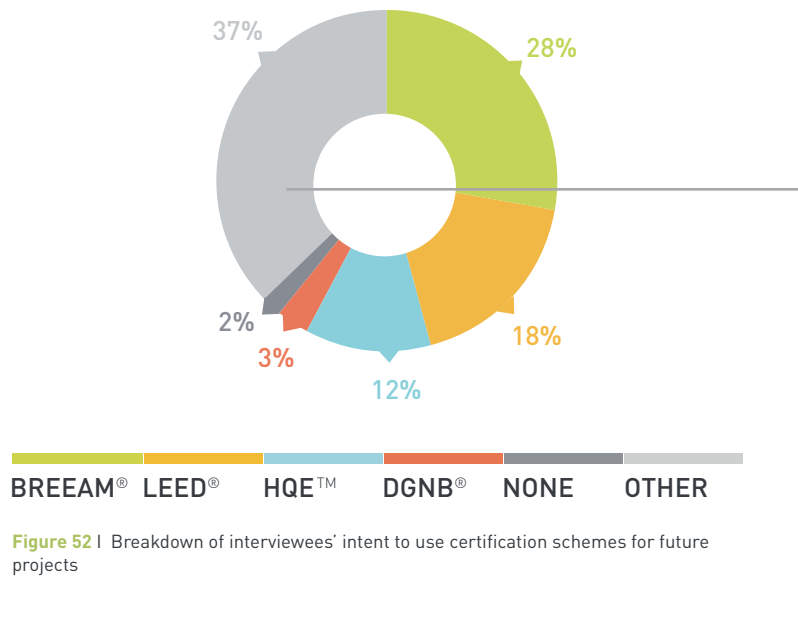


Figure 52 | Breakdown of interviewees' intent to use certification schemes for future projects

Question Asked

Which certification schemes or methodologies will you integrate in upcoming projects for 2019 and beyond ?

“ 58% of respondents intend to use the most recognised certifications (BREEAM®, LEED® and HQE™). These results are consistent with those obtained in Chapter I. Still, the certification market remains fragmented as 37% of respondents use a diversity of existing regional labels.

Other regional and international schemes

Sustainability

- BDF
- BDM
- BDO
- BEE+
- BePos
- BBKA
- BNB
- E+C-
- Effinergie
- Green Globes
- Green Star
- HafenCity Ecolabel
- EPBD Directive
- LBC
- ÖGNI (DGNB® System partner)
- One Planet Living
- RTS environmental
- VERDE (GBCe)

Wellbeing

- C2C / Air Indoor Comfort
- Fitwel
- Edge
- Label accessibilité
- OsmoZ
- WELL™

Digital

- R2S
- WiredScore
- Zero Energy Building (ZEB)

Biodiversity

- BiodiverCity®

03. IMPACT ON CONSTRUCTION COSTS

Carrying out a certification is still perceived as costly

Question Asked

From your experience, does a certification imply an increase of construction costs ?
If so, by which percentage ?

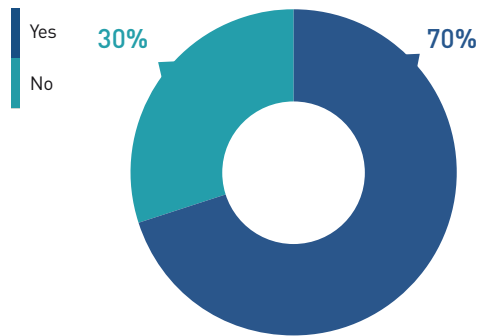


Figure 53 | Perception of the increase of construction costs due to certification

“ 70% of interviewees find that the implementation of a certification implies an increase of construction costs. The average percentage of increase is between 1% and 7%.”

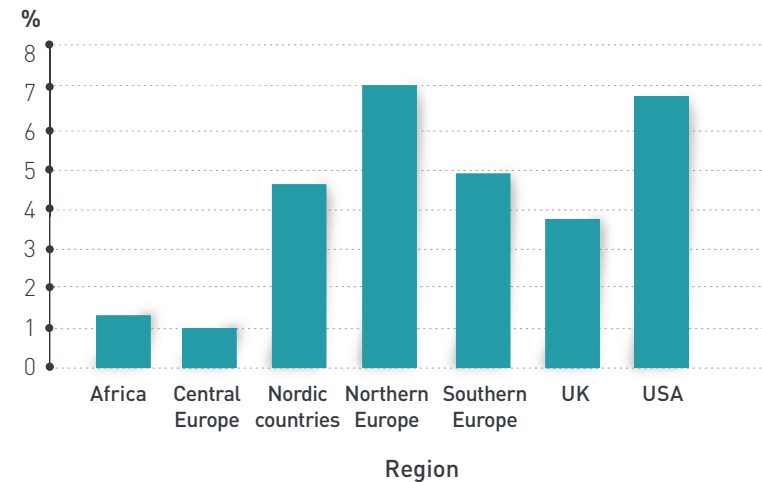


Figure 54 | Regional distribution of certifications according to the perception of the increase of construction cost per region

“ Most of these increases in construction costs due to certification are in the Northern European regions and in the USA.”

C | Certification trends

01. DRIVERS FOR CERTIFICATION

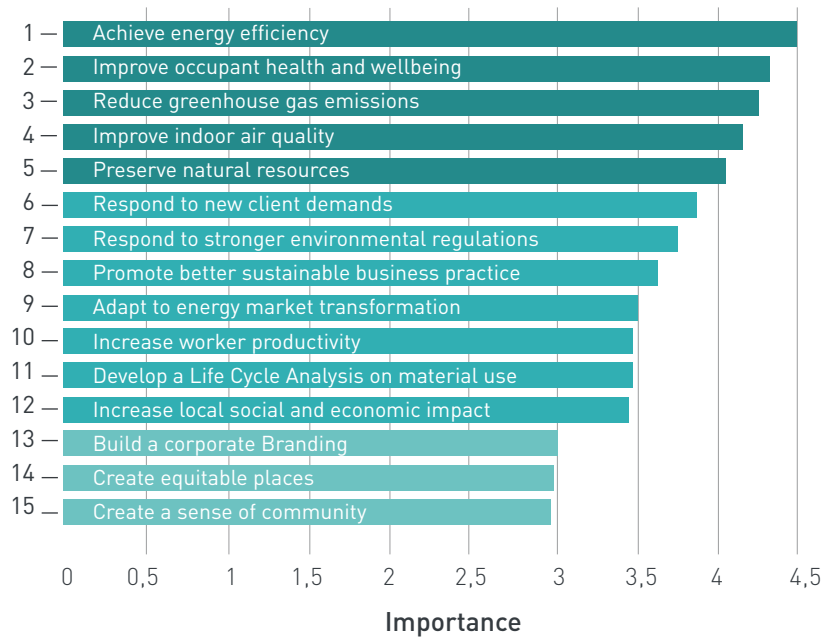


Figure 55 | Importance given to various social and environmental drivers from 1 to 5

“Energy related objectives are the top drivers for environmental performance, followed by wellbeing. “Creating a sense of community” is mentioned as the last priority.

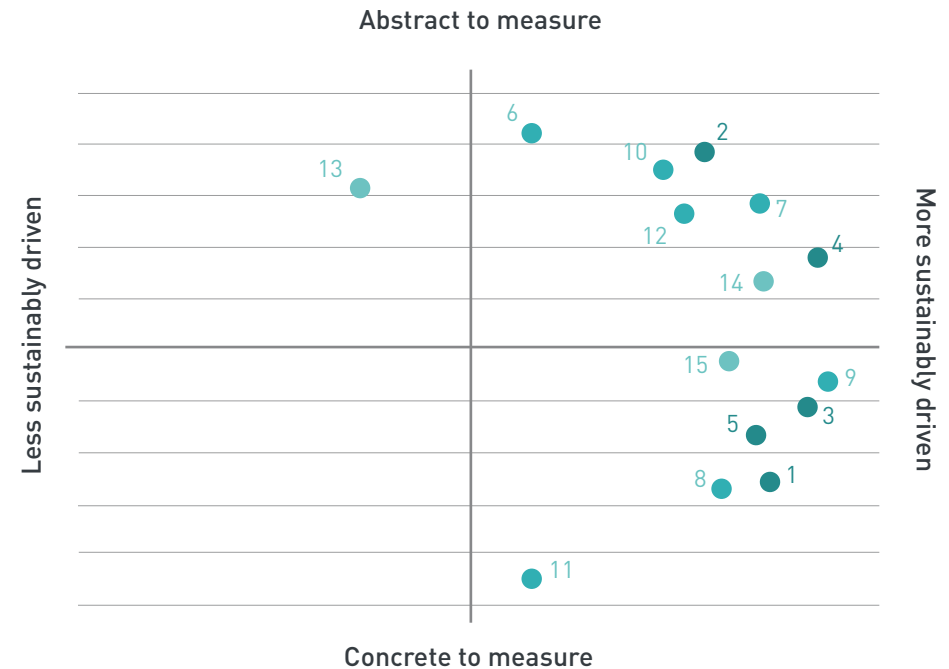


Figure 56 | A principal component statistical analysis allowed to identify the main drivers for certifications

“Regarding the principal component analysis for certification drivers, all drivers take into account sustainability except for the “Build a corporate branding driver”. Indeed, they are all related to environmental, social and economic issues.

Note

Regarding the drivers for certification, four parameters have been highlighted. On one axis we show the sustainability aspect and on the other the measurability of these drivers.

02. EXPECTED BENEFITS FROM A CERTIFICATION

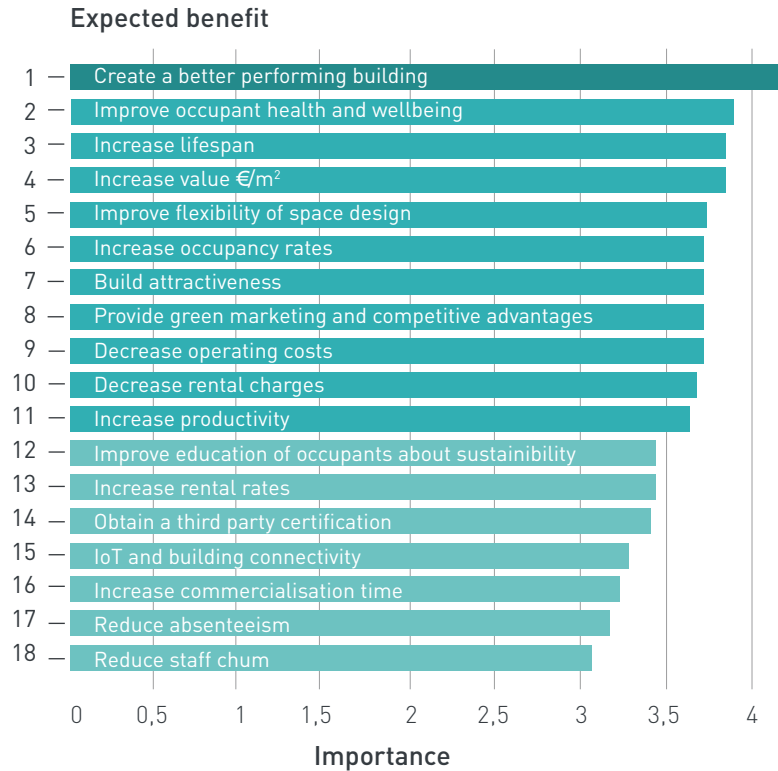


Figure 57 | Priorisation of benefits expected from a green building scheme from 1 to 5

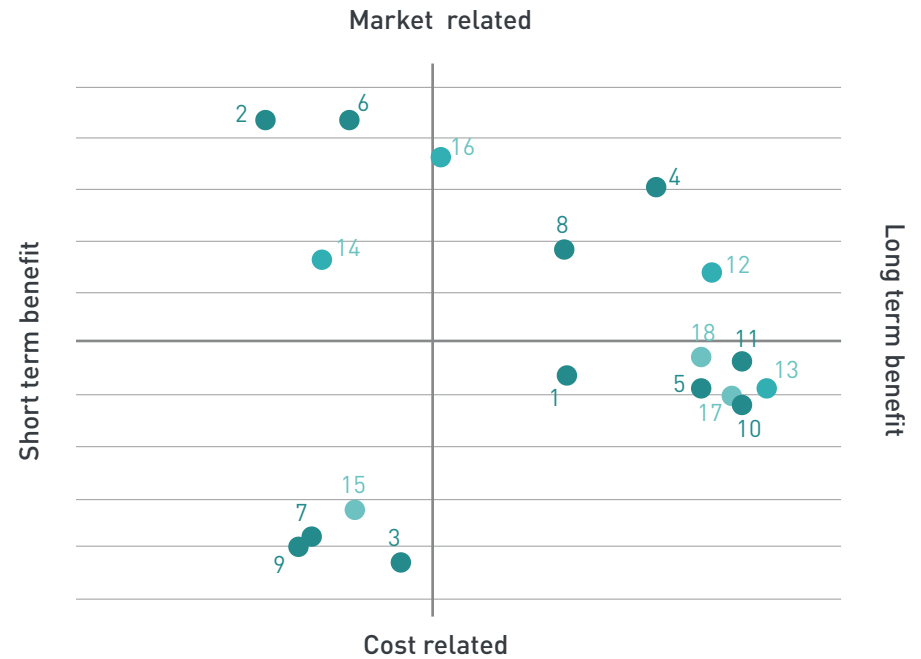


Figure 58 | A principal component statistical analysis allowed to identify the main drivers for expected benefits from a certification

“ Four main parameters are identified related to the different expected benefits, i.e. achieving benefits in the short or long term, creating more sustainable value, and optimising cost.

“ Creating a better performing building (1) is the first expected benefit from a certification according to respondents, linked to cost optimisation.

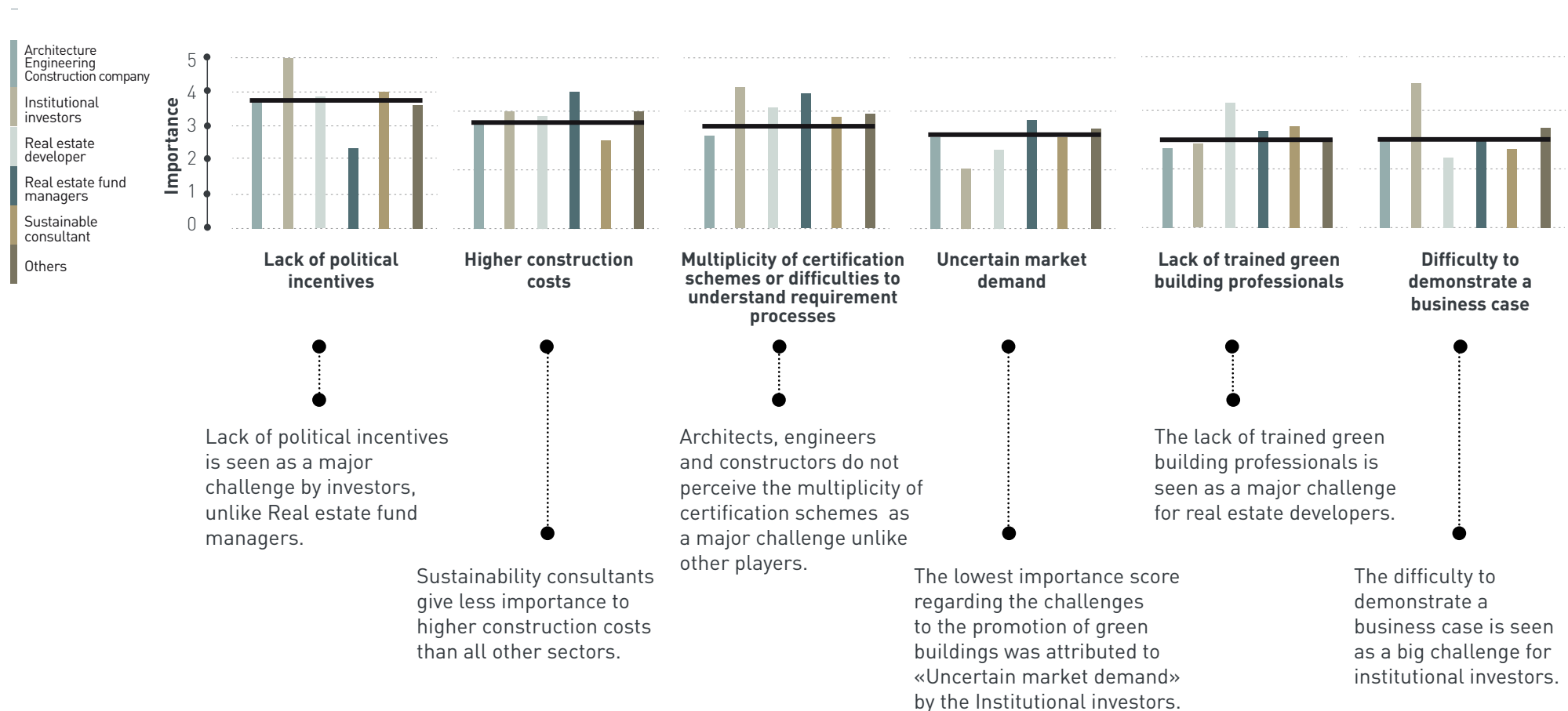
“ Improving occupant health and wellbeing is 2nd on the list of expected benefits. This benefit is linked to long term sustainable value creation.

“ Increasing the lifespan of a building (3) is related to an optimisation of costs and a maximisation of benefits.

03. CHALLENGES FOR THE PROMOTION OF GREEN BUILDINGS BY CATEGORY OF RESPONDENTS

Lack of political incentives and construction costs are perceived as the biggest challenges

Figure 59 | Challenges, by significance and sectors, regarding the promotion of green buildings



01. PRODUCTS AND SERVICES INSTALLED FOR GREEN BUILDINGS

Networking, Internet and certification bodies are the 3 most common sources to obtain information about green buildings

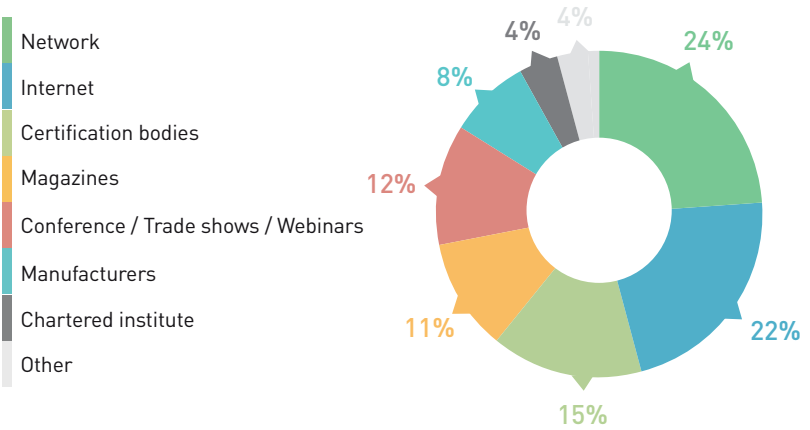


Figure 60 | Breakdown of the information sources used to obtain information about green building products

“Networking and Internet represent the biggest part of information sources used to obtain information on green building products at respectively 24% and 22%, followed by certification bodies at 15%.”

HVAC and Water management are at the top of recommended green products and services

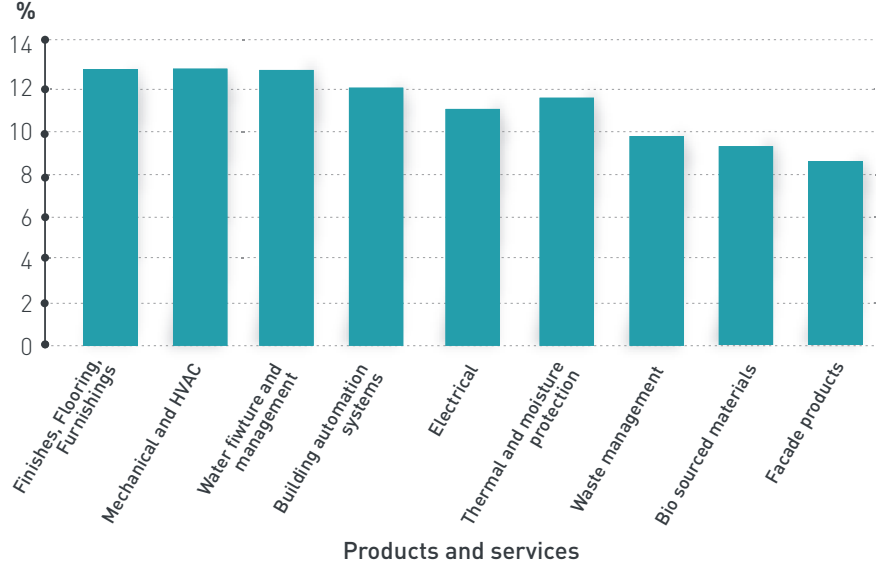


Figure 61 | Breakdown of procurement for installed green products and services

“Although some products, such as “mechanical and HVAC or water management systems”, are more widely used, there is a small difference between the procurement of products.”



Patrick Nossent
President, Certivéa, Cerway



“ Regulations will increasingly consider ecological criteria. This reinforces the value of certifications that outpace these requirements. ”

Certivéa is a full-fledged actor of the sustainable city of tomorrow. Beyond its certification activities, it makes living, building and working more sustainable. Cerway is a certification body and the operator of HQE™ worldwide. Patrick Nossent has been the president of both Certivéa since its foundation in May 2006 and Cerway since its foundation in September 2013.

Green Soluce: How do you see the evolution of Green Building certification methodology?

Patrick Nossent: Various studies show the importance of treating the different aspects of sustainable development simultaneously to respond to major environmental and societal challenges while increasing the value of buildings and reducing the risk of obsolescence. First, by addressing quality of life, as users are sensitive to health aspects such as air quality for example, by the comfort and by the services offered in buildings and neighbourhoods. Environmental issues lead us to address new challenges and find new answers. In this approach, climate change has its place both in a greenhouse gas mitigation objective and in a climate change adaptation objective. Other environmental issues such as saving energy, water and resources, limiting pollution and waste must also be considered. Third, economic performance: Green buildings provide cost savings, comfortable buildings bring performance to work. This favorable economic equation fosters the development of certified sustainable buildings.

Green Soluce: How do you see the evolution of the wellbeing and digital (Osmoz and R2S) labels in the next 5 years?

PN: OsmoZ and R2S were officially launched last year and the first certificates were issued this year. They generate many requests because they answer to strong evolutions of the society.

Lifestyles and work changes impact real estate business and Osmoz allows you to develop and manage your workspaces, animate your premises, offer services and concerted policies for a better quality of life at work for your employees and a greater efficiency of your organizations. At the same time, digital is growing in all areas and R2S-Ready2Services is enabling your buildings to become true digital service platforms in an open and secure environment.

Green Soluce: Which are the main constraints for projects to choose to be certified (cost, technical expertise, products available)?

PN: Architectural and technical solutions exist. Their implementation as part of the certification gives more value to the building. This may cost more if the environmental objectives are not fixed from the start, however, if you consider these objectives very early, this will allow the project management to propose the most appropriate architectural and technical solutions in the field, context of the operation and in its economic equation.

Green Soluce: Any recommendations for real estate players developing green buildings?

PN: Start quickly if you have not already done so. Work with qualified and committed professionals. Take advantage of your and others feedback. Generalize these steps to your entire building portfolio because that is what will give value to your business.

For this, surround yourself with trained professionals and take advantage of your first experience to do, operation after operation, better and cheaper.



Gilles Genin

Founder & CEO, InGeTel-BET

“ We must do more with less, and that means taking a global approach to telecommunications engineering, and not limiting our vision to what we need today or tomorrow, but also what we may need five, ten, or even thirty years from now. ”

InGeTel-BET is a recognized player in the field of Information and Communications Technology (ICT). It offers a wide range of services in France and worldwide, from project management to training centers. Referent and assessor of the R2S Label, InGeTel-BET has a strong positioning in Smart Buildings and Smart Sustainable Cities. It is also fully committed to the preservation of the planet, and has developed several eco-friendly ICT initiatives. Gilles Genin founded InGeTel-BET in 1999 and has been the CEO since then.

Green Soluce: In what way does Telecommunications Engineering help create green buildings and cities?

Gilles Genin: A building, whatever its use, needs telecommunications engineering. Unfortunately, this aspect of buildings, and cities for that matter, has been largely overlooked by the ‘green’ movement. The current norms for telecommunications systems date back to 1992 when we were faced with the problem of converging different types of communications onto one reliable infrastructure which has led to an over-use of copper cabling and a telecommunications infrastructure often so rigid that we’re left with no other option than to rip it out and start over every 7 to 10 years. The cost is enormous, and not just financially. The telecommunications infrastructure accounts for around 3% of a new-build’s carbon footprint, but over the lifetime of a building, this increases to over 20% for today’s standard constructions. To tackle this issue, we have to introduce notions of flexibility, efficiency, and interoperability.

Green Soluce: How do you see the evolution of Smart and Green Buildings in Europe?

GG: The ecological problem of buildings is global, and to resolve it we must take a global approach so as not to bring fake solutions creating even more ecological problems or which don’t conform to the desired results. Buildings are a complex ecosystem made up of different materials, products, conduits, cables, etc., so real ecological sustainability is by its very nature multifaceted. Sustainability is not just a problem of energy efficiency. Real solutions on that front are on the horizon. But unless we address the problem of carbon, there’s nothing all the energy in the world can do to protect us. To this end, we are exploring new opportunities in terms of Research & Development by extending the reach of our sustainable cabling system into the residential and municipal markets.

Smart and Green Buildings will certainly bring with them changes to the economy, as industry can not long push for infinite growth in a finite world. We will move into an economy based not on the number of products sold but on the services those products provide.

Green Soluce: Do you have any recommendations for projects aiming to create connected buildings, serving smart cities?

CG: Mutualize, optimize, adapt, standardize, simplify, globalize....

Remember that simple is always beautiful. We can do more with less. More services, less materials. Interoperability and flexibility are the keys. Unfortunately, too many manufacturers and industries design their products with the goal of keeping their customer stuck in their catalogue for as long as possible. So many services in buildings are isolated on specific infrastructures: for each service, its own infrastructure. It’s a waste of resources, and a waste of energy. Buildings account for the largest use of energy and have enormous carbon footprints. Digital solutions can bring numerous advances to sustainability but beware how they’re used. If not conceived and organised correctly, these same solutions can easily become an energy divide, an important factor in carbon emissions and accelerate the depletion of natural resources. We must start thinking in terms of TCO (Total Cost of Operation) instead of Capex.



Chapter IV

SUSTAINABLE VALUE

A general analysis of certified
buildings in France

Methodology

A | The rental market of certified buildings

- 01. RENTAL PRICE TREND BY REGION AND CITY
- 02. RENTAL PRICE BY USE TYPE

METHODOLOGY

HBS Research supported the 2019 Edition of the Sustainability Certification Barometer™ by Green Soluce by providing market data for the analysis of certified buildings in France.

In contrast to the approach taken for the 2018 edition, the 2019 edition aims to focus only on certified projects and the relation to the rental price. This study is based on information obtained by the French Treasury. The following aspects define the methodology of the study:

- 1- An observation period was taken between 2014 and 2018.
- 2- The dataset analysed is composed of 203 certified buildings from which it was possible to obtain financial, rental, and/or occupation information.
- 3- The dataset includes new constructions and renovations only.
- 4- The rental prices shown in the study are the final estimation of HBS's modelling expertise based on real rental price, other costs, and similarity of indicators between properties (surface size, typology, etc) as to extrapolate the information to other certified buildings.

It must be noted that these results are dependent on the publicly available information, thus some information might be incomplete in the aggregate of results.

SAMPLE SIZE

A first analysis of the dataset indicates that 75% of the sample are certified buildings located in three main departments in France: 75 Paris, 92 Hauts-de-Seine (Western side of Paris) and 69 (mainly Lyon). All the buildings analysed include an office use, where 61% of those buildings had a 100% or majority of office use (office and office mix), the remaining percentage had a larger portion of its surface destined to another use with a lower degree for office use.

Building Use by Region	59 Nord	69 Rhône	75 Paris	92 Hauts-de-Seine	Rest of France	Total
Office	1	8	33	26	8	76
Office Mix	2	3	21	11	11	48
Other	2	2	6	3	14	27
Unknown	2	7	7	2	4	22
Resid. Mix		1	7	4	5	17
Commercial Mix	1		4	4	1	10
Hotel Mix			3			3
TOTAL	8	21	81	50	43	203

Type of Tenant	%	Type of occupation	%
End-User	65,0	MULTI	58,1
Unknown	21,4	MONO	35,5
Private Investors	10,3	Unknown	6,4
Public Entities	3,4		

Figure 62 | Breakdown of the sample dataset by building typology and region, type of tenant and type of occupation

01. RENTAL PRICE TREND BY REGION AND CITY

The French rental price of certified buildings is driven by projects in Ile-de-France

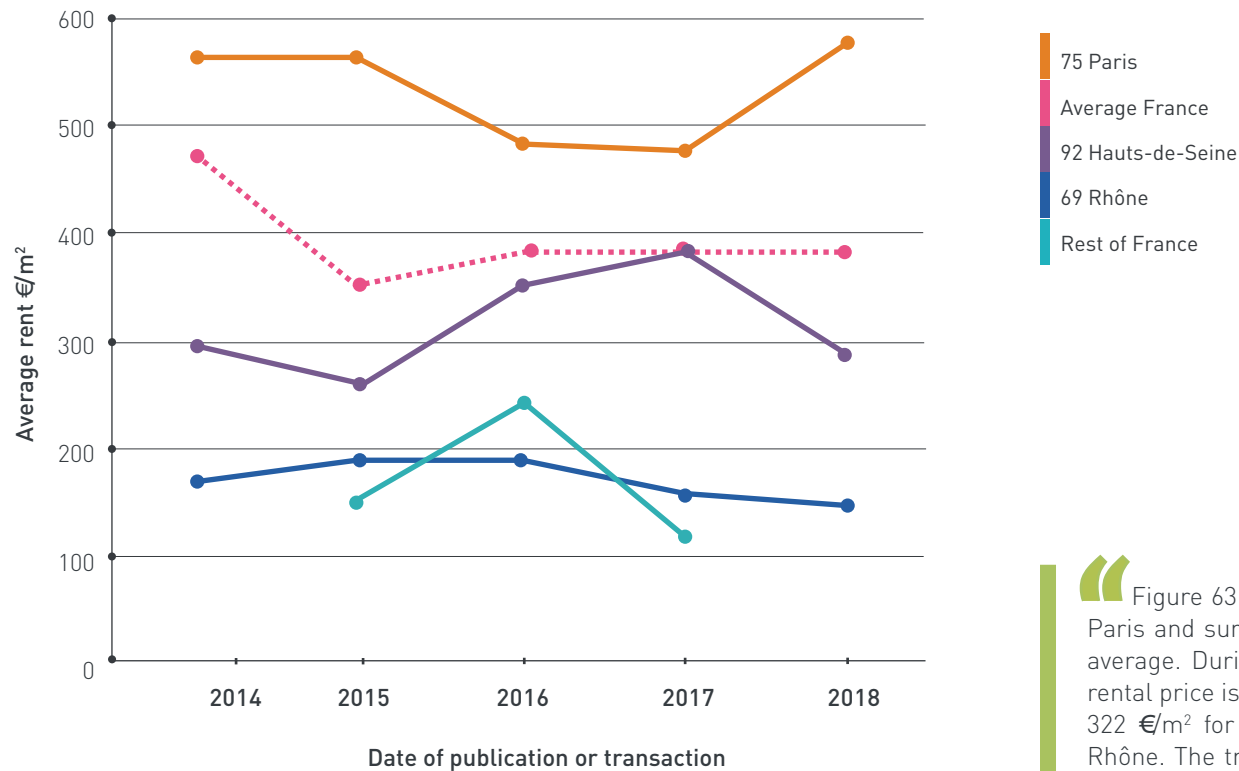


Figure 63 | Average rental price from 2014 – 2018 for France, departments 75, 92 and 69 and rest of France

Figure 63 shows the impact of the rental price of Paris and surrounding areas relatively to the country average. During the 2014 – 2018 period the average rental price is 360 €/m² for France, 496 €/m² for Paris, 322 €/m² for the Hauts-de-Seine and 189 €/m² for Rhône. The trends seen for the department 69 could be used to estimate the rental price for the rest of the country.

A | Rental market of certified buildings

01. RENTAL PRICE TREND BY REGION AND CITY

Paris center and its western suburbs lead in rental prices

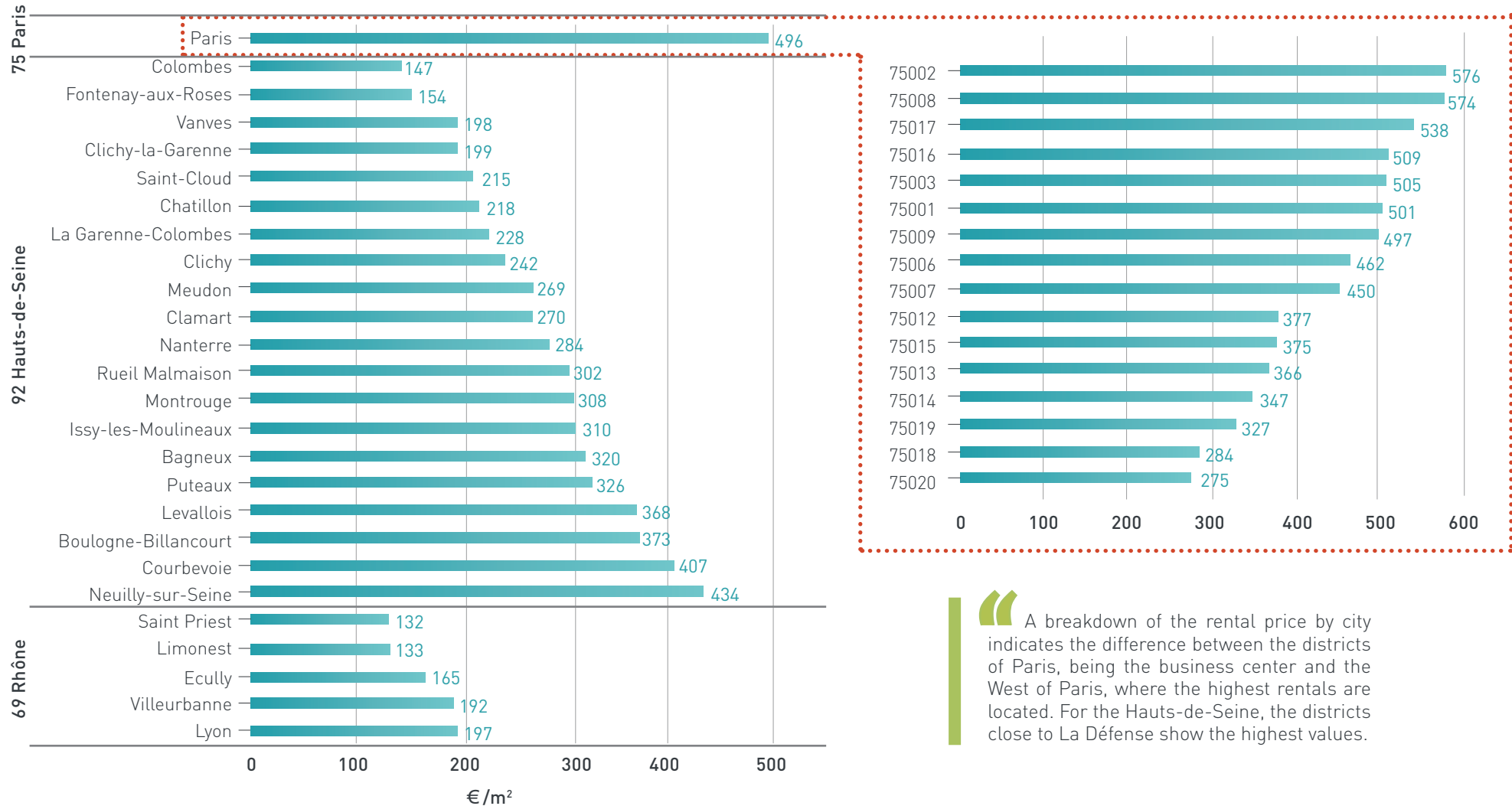


Figure 64 | Average rental price €/m² from 2014 – 2018 for specific cities within the departments studied

02. RENTAL PRICE BY USE TYPE

Rental prices reflect the complexity of the type of building project and user type

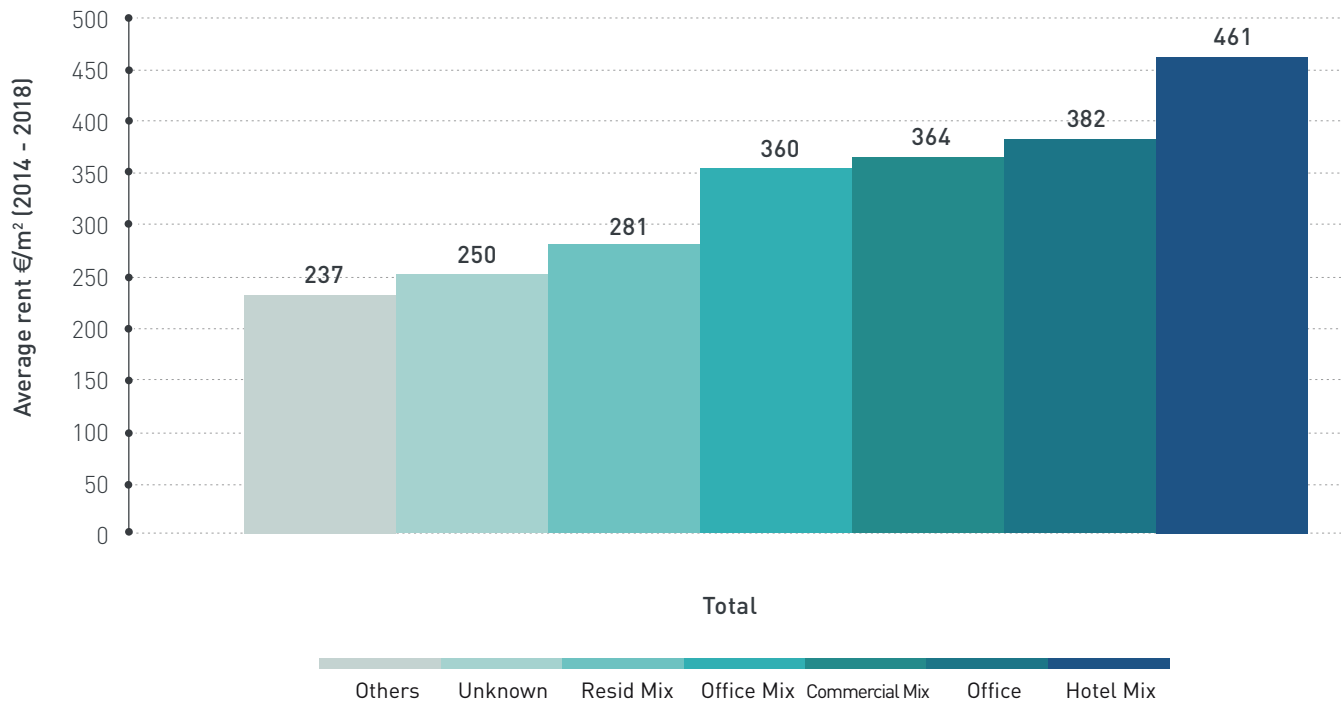


Figure 65 | Average rental price from 2014 – 2018 for different end-uses



Figure 65 indicates that buildings with hotel and office use have the highest value in rental prices.

MANY THANKS
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Contact

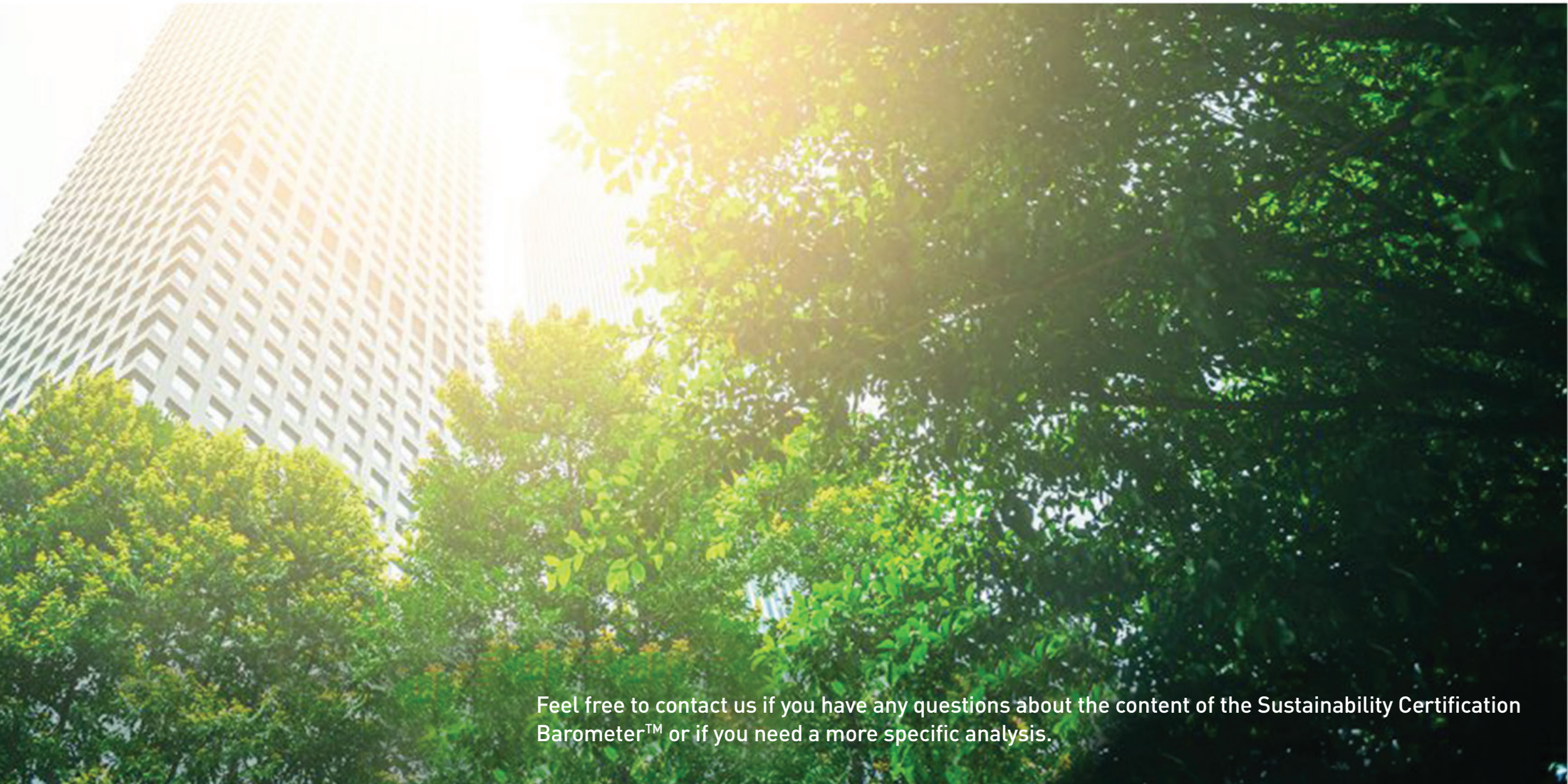
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