

# DOES GREEN PAY?

(Corporate  
practical res

What is it? How is it  
do we comply with it?

According to a recent survey by C  
sustainability is already critical to their bu  
become business critical over the next two ye  
In the light of this, the following study considers su  
view and examines some of the c  
corporate occup

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Sustainability no longer tops the corporate agenda merely as a topic, it is now a key element of CSR (Corporate Social Responsibility) demanding a response.

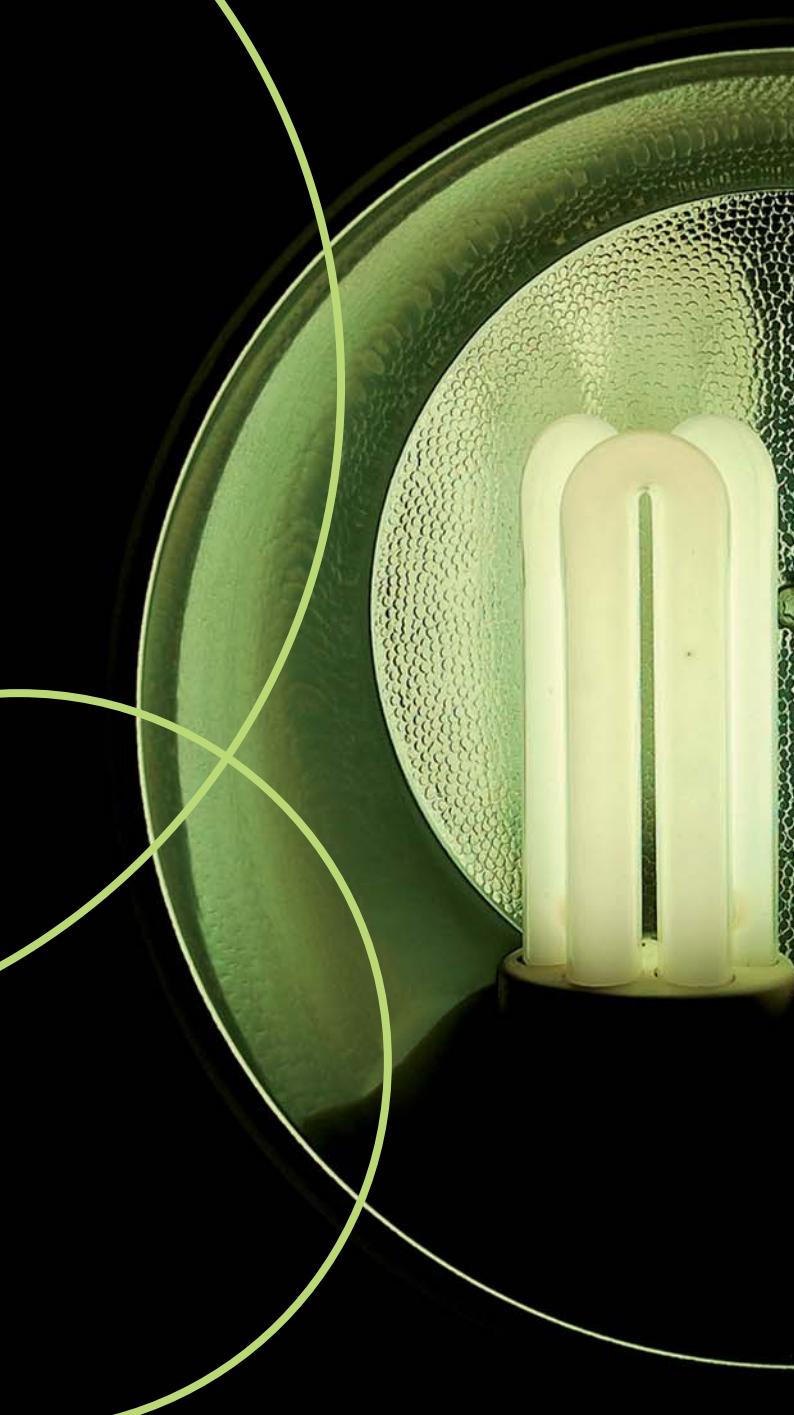
measured? And, more importantly, how

moreNet, 61% of occupiers say that business and 23% believe that it will

sustainability from a practical point of challenges and opportunities facing the occupier in the drive to be green.

## A definition of sustainability

Sustainability is not just energy efficiency. It is a complex and varied subject encompassing a wide range of environmental, social and financial aspects. There are eight key concepts of sustainability that should form the cornerstone of a sustainable real estate strategy:





Picture by thingermeijg

- **Adaptability**

To reduce the frequency with which buildings need to be replaced, adapted or refurbished, sustainable buildings need to start off being fit for their intended purpose. At the same time, they also need to be able to be adapted if necessary in order to meet the changing requirements of occupiers as well as any possible change in use.

- **Location**

The location of a building needs to be carefully considered in the context of its impact on local surroundings. Key issues include the proximity to a range of public transport connections as well as the potential impact of future congestion charging, car parking taxes and increased fuel costs.

- **Energy efficiency**

The availability of energy is critically important, as natural resources of fossil fuels are fast depleting. In addition, carbon emissions from fossil fuels are believed to be the major cause of climate change.

- **Water and waste**

The property sector has a significant impact on waste generation and water use, both in the construction/refurbishment and occupation of buildings. Legislative and cost factors will increasingly force property developers, investors and occupiers to consider waste generation and water use across all types of property.

- **Longevity and future-proofing**

Buildings need to be made to last; in addition to being made to be adaptable, buildings should be designed to have a long life expectancy. This will mostly be achieved by using durable but easily replaceable materials and by designing buildings that are relatively easy to take apart, adapt and reassemble.

- **Appeal to users**

This encompasses both current and future occupiers, together with visitors and other stakeholders. From a sustainable perspective it is necessary to take a longer term view and create a secure and productive work environment which takes into account future trends.

- **Community and regeneration impact**

The socio-economic impact and contextual fit of property is considered to be of growing importance in creating and maintaining sustainable communities. Buildings must be appropriate for their surroundings and form a successful point of interaction for the local community. New development can also bring about much needed investment in regeneration areas. It can also lead to the re-use and regeneration of vacant or derelict buildings and sites.

- **Ecological and land use impact**

Sustainable land management techniques should be employed to protect and enhance natural assets, whilst minimising adverse impacts on soil, air, water and wildlife.

# Green Policies in Belgium

## Legislation

The present stir regarding green buildings in Europe and more particularly in Belgium did not appear without any reason. The main factor behind this sudden interest is the Energy performance legislation change imposed by the European Union to its members. Two directives support the vision of the European Union regarding the Energy Performance of buildings: 2002/91/CE (also known as EPBD or Energy Performance of Building Directive) and 2006/32/CE. The main driver of these directives is simple: 40% of all the energy used in EU is related to buildings. To-day, the building sector undoubtedly offers the highest potential for energy use reduction and more generally for a better integration in our environment with a more "sustainable" behavior.

These two directives as well as their implementation by every Region in Belgium have been thoroughly explained in many studies, therefore we will outline their major implications only.

Directive 2002/91/CE key points:

- There will need to be a valid method to compute the Energetic Performance of any building (EPB),
- Each new or renovated building will need to comply with specific Energetic Performances.
- These Energetic Performances will need to be certified for existing buildings (subject to sale or rent) and for public buildings
- There will need to be regular inspections of boilers and air-conditioning systems in buildings and in addition an assessment of the heating installation in which the boilers are more than 15 years old.

Following the directive a minimum level of performance is defined. This means for new or renovated buildings a maximal reference value of an estimated primary energy consumption. This energy consumption includes all energy requirements (heating and cooling, lighting, auxiliary, ...) with detrimental default values when some terms are not known, (for instance lighting energy, building's envelope airtightness,...).

Directive 2006/32/CE key points:

- The public sector needs to lead the way to sustainability and implement Energy Efficiency measures in the public tendering.

These directives need to be implemented by each Region, Therefore Flanders, Wallonia and Brussels have each gone their way and came up with different, although similar, solutions. The main difficulty of the coming months will probably be the difference in timing for every region as well as differences in computing the different factors influencing the EPB.

### Brussels Criteria

	New Construction and Heavy Refurbishments		Light Refurbishments
	dwellings	offices	
E	E90 (2008 - 2011) E70 (2011 - ...)	E 90 E75 (2011-..)	No
K	K40	K45	No
U/R	Yes	Yes	Yes
Ventilation	Hygienic Ventilation	Hygienic Ventilation	Hygienic Ventilation
Technical specifications	Yes	Yes	Yes

The following chapter outlines the key points for each region.

### • Brussels:

Since July 2008, each new construction or refurbishments of buildings (some exceptions exist) now need to meet the "Energetic Performance of Building" (EPB) standard. The IBGE-BIM (Environment and Energy administration of Brussels) will deliver an EPB certificate for every new construction meeting the requirements defined by the EPB based on the declaration PEB done by the "PEB advisor". Refurbishments will also need to meet the defined requirements (see table) but no certificate will be delivered by the IBGE-BIM.

The EU directive also requires every existing building to be certified. The specific requirement and procedure have yet to be defined by the authorities.

### • Wallonia

The timeline in Wallonia is also different as proper legislation will only be effective in September 2009. In the meantime a first step is taken as every new construction built as from September 2008 will need to meet an insulation of K45, specific Umax values (depending on the building parts) as well as proper ventilation meeting the NBN D50-001 standard. This legislation will be integrated in the CWATUPE.

Each region has put in place a number of measures to help the development of sustainable construction (Green certificates, Tax reduction ...) as well as penalties if the requirements are not met.

Other local and regional regulations impose several rules in relation with environment, regarding for instance urban and site impact, pollution and health (noise and other type of pollution), accessibility for disabled people, .... But these constraints are dispersed in several codes and it is not obvious to check the conformity of a given project on all aspects. The conformity is often issued from an administrative process where the rules are still quite fuzzy on these emerging concerns, strongly depending on specific local context.



- Flanders

Flanders has been quicker on the ball than the other two Regions as its legislation was ready by January 2006. Since then, every new construction or renovation of existing building needs to comply with the "Energieprestatiedecreet 2006" and meet a level of E100. As in Brussels, every building will soon need a certificate detailing their energy profile.

EPB-eisen (EPB standards)	Type of work	Use			
		Residential	Offices and Schools	Other use	Industries
New contruction	Thermic insulation	Up to K45 (building) and maximum U-value or minimum R-value	Up to K45 (building) and maximum U-value or minimum R-value	Up to K45 (building) and maximum U-value or minimum R-value	Up to K55 (building) and maximum U-value or minimum R-value
Renovation					
Dismantling					
Partial renovation with a CV (Constructible Volume) > 800 m <sup>3</sup> *					
Partial renovation with at least one residential unit*	Energy standards	Minimum E100 (Residential unit)	Maximum E100 (single use)		
Extension with a CV > 800m <sup>3</sup> *					
Extension with at least one residential unit*	interior climate	Minimum ventilation facilities and risk reduction of overheating (residential unit)	Minimum ventilation facilities	Minimum ventilation facilities	Minimum ventilation facilities
*the EPB-eisen are applicable for the new part only					
Partial renovation with a CV ≤ 800m <sup>3</sup> and without residential unit	Thermic insulation		maximum U-value or minimum R-value (for new part)		
Extension with a CV ≤ 800m <sup>3</sup> and without residential unit	Energy standards				
	interior climate		Minimum ventilation facilities (for new part)		
Refurbishment	Thermic insulation		maximum U-value or minimum R-value (for refurbished and new part)		
	Energy standards				
	interior climate		Ventilation: minimum fresh-air openings (windows replacement)		
Change of use with a CV > 800m <sup>3</sup>	Thermic insulation		Maximum K65 (for building of part of building undergoing change of use)		
	Energy standards				
	interior climate		Minimum ventilation facilities (for building, of part of building, undergoing change of use)		

# Green Policies in Belgium

## Certification

In order to set targets for sustainability as part of a wider CSR policy, most countries have introduced green building rating systems, all of which differ. Whilst some focus on specific characteristics such as water usage and carbon emissions, others look at overall building quality.

BREEAM (Building Research Establishment Environmental Assessment Method), which originated in the UK, and its US equivalent LEED (Leadership in Energy and Environmental Design) are the most widely recognised.

Whilst both assess commercial buildings according to set environmental criteria and grant a rating, they differ in terminologies, structure and performance assessment methods. At present, LEED is the predominant accreditation in Europe, mainly due to its popularity amongst US occupiers and investors, although it is likely that the two will co-exist side by side as they each continue to evolve.

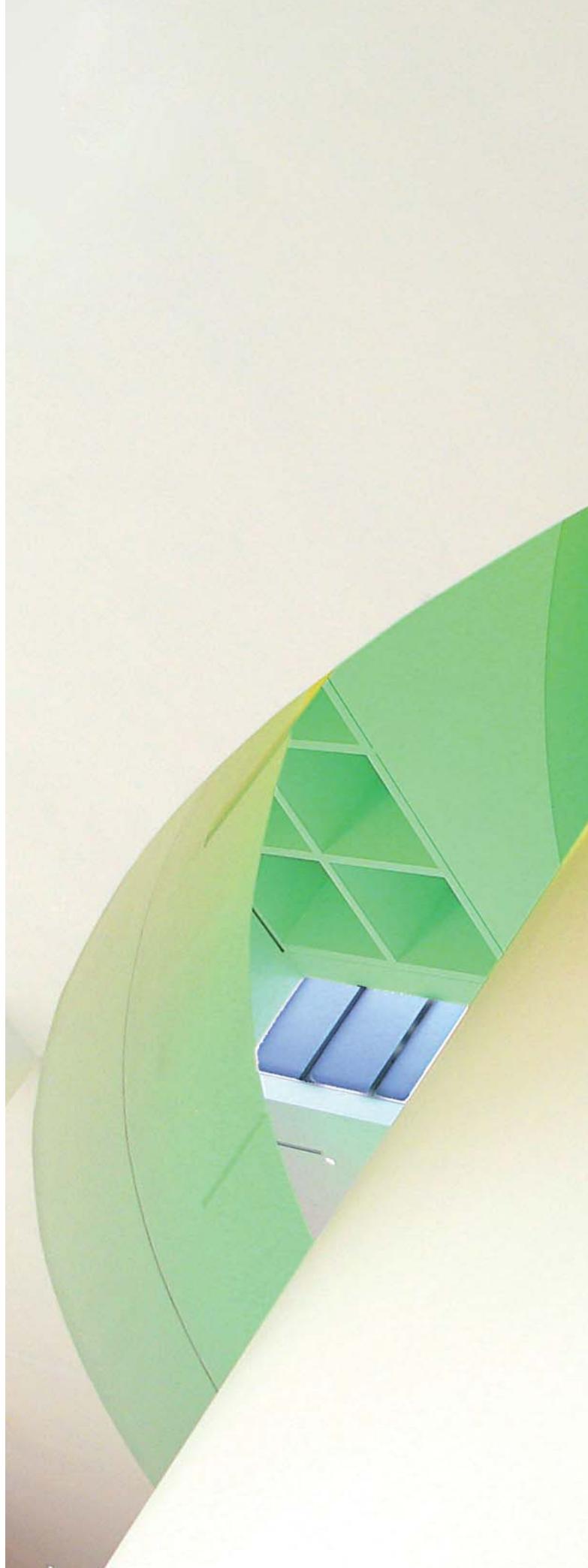
In fact, in some countries multiple certification is an emerging trend, with occupiers and developers opting to attain a national standard in addition to either BREEAM or LEED<sup>1</sup>.

Since compliance with BREEAM and LEED is not mandatory, the main legislative stick behind the greening of Europe's building stock is the Energy Performance of Buildings Directive (EPBD). This sets overall targets and fixes long step dates for the reduction of carbon emissions by various means – carbon trading, building certification and energy efficiency standards – but leaves Governments of various states to fill in the detail.

As a result, the EPBD is being implemented at vastly different rates across the region, with countries such as Sweden and Denmark, which have been conscious of environmental responsibility for decades, leading the pack. Whilst this makes sense – climatic variations mean that heating and cooling needs will differ enormously between northern and southern Europe – varying standards and different rating scales from one country to another means that there is no common pan-European benchmark through which owners and occupiers can compare the energy efficiency of buildings. As such, companies with pan-European property portfolios will need to develop a comprehensive understanding of legal requirements at a national level. This should include practical details of who the regulatory bodies are and where to find accredited inspectors to carry out certification as and when it is required - either on lease renewal or sale of the asset.

In Belgium, a first attempt of voluntary certification rating system is currently being implemented. This system, called "Valideo" is promoted by SECO, a technical control bureau for construction, in collaboration with the CSTC/WTCB (in English : Belgian Building Research Institute). Details concerning this certification rating system can be found in the table below.

1. In France, Le Mermoz (22,000 sq m), which is located in Bourget in Paris, is the first building in the country to have a double HQE/BREEAM rating. Furthermore, most of the new buildings proposed under the 'La Défense renewal plan' will be accredited with the US's LEED certification on top of HQE and BREEAM, as American investors such as Calpers take on bold sustainability commitments as part of their global investment strategy.





### Measuring sustainability : rating systems

Country	Certifications	Grade levels
USA	LEED	Certified, Silver, Gold, Platinum
UK	BREAM	Pass, Good, Very Good, Excellent
Germany	LEGEP	No
France	Equer, ESCALE, HQE	No
Netherlands	Eco-Quantum	No
Belgium	Valideo	No

### Valideo - reference guide : sustainable construction

Basic structure: 4 fields and 16 points

#### 1. Site developement and construction

- 1.1 Integration and enhanced value  
Environmental impact, architectural integration, site design.

##### 1.2 Construction site

- Pollution management: noise, visual, waste, traffic,....

##### 1.3 Materials, products

- Quantity limitation, taking into account lasting and recycling, 1.2 Construction site potential risks(environmental, health)

##### 1.4 Adaptability

- Flexibility in use, potential of functionality evolution.

#### 2. Management

##### 2.1 Energy

- Requirement limitations, systems optimization, renewable energy application.

##### 2.2 Water

- Requirement limitation, rain water management, waste water management.

##### 2.3 Maintenance

- Since pre-design phase, taking into account a maintenance scheme, followed by the implementation.(training)

##### 2.4 Amount limitation, pollution limitation, to foresee storage provision and collection zones.

#### 3. Comfort

##### 3.1 Hygrothermal

- Temperature and humidity control, time and spatial homogeneity

##### 3.2 Visual

- To insure an optimal natural and artificial lighting level, use of natural light.

##### 3.3 Accoustical

- Protection against external, internal sources, including services.

##### 3.4 Health

- Air, water, space quality(odours, radiation)

#### 4. Social value

##### 4.1 Live surroundings

- Design quality, promotion of human communication, of indoor aestetics.

##### 4.2 Mobility

- Public transport promotion, providing easy access.

##### 4.3 Accessibility

- Easy use and facilities for disabled persons

##### 4.4 Breaking security

- Protection against burglary, privacy protection.

## Quantitative aspects

“A distinction needs to be made between a “green building” and an “energy efficient building” as most of the time the “green” aspect is a misnomer. This “green” norm exceeds from far the “energetic buildings” common sense”

*Henri Legrand  
Fidentia Real  
Estate*





## The difficulties to assess a green building

Legal requirements in Belgium to define a green building have been so far limited to three levels : K, U and E

None of these levels can be breached, and adequate installations, even if they are more expensive, need to be put in place in order to meet the Belgian and European legislations.

But a distinction needs to be made between buildings which are conform to this legislation, which we can call “environmental friendly” buildings, and what is called a “green” building.

Some actors believe that most of the time, the “green” aspect is a misnomer and that the market is suffering from “false green buildings” only focusing on one single aspect of sustainability.

More generally, a “green” building should correspond to “a high performance property that considers and reduces its impact on the environment and human health”. In its definition, Jerry Yudelson<sup>1</sup> indicates that a green building is designed to use less energy and water and to reduce the life-cycle environmental impacts of the material used. He adds: “this is achieved through better siting, design, material selection, construction, operation, maintenance, removal and possible reuse.”

For the moment it is difficult to define precisely what a green building is for Brussels in particular because the offer is almost inexistent. Some green developments are currently under construction but none of them have been let yet. Although some companies claim that they’re ready to pay higher rents in order to demonstrate their CSR concern, the economical element still needs to be demonstrated.

Besides, even though a green building should include some qualitative and comfort features, a quantitative analysis would be very difficult to do on such criteria. Our analysis will then focus primarily on the level of insulation to define a green building compared to a traditional one.

In an attempt to determine the profitability of green buildings, students of the Solvay Business School<sup>2</sup>, with the support of DTZ, have analysed energetic performances of green office buildings. In addition, they have interviewed major actors of the Brussels real estate market, including architects, developers, investors, tenants.

Some of the conclusions are presented hereafter.

1. Yudelson J. (2008), *The green building revolution*, Island Press

2. A.Clément, J. Fearn, M. Minet, O. Miart (2008); “Green Buildings” Solvay - Seminar of Finance.

# Quantitative aspects

## Methodology

Five levels of insulation have been defined: K70, K45 (legal norm), K38, K38\*, K26 (see table).

As the aim of this analysis is to study the profitability of a green investment compared to a traditional one, different models based on the different K levels scenarios have been created. Each model analyses the impact on profitability when going from a K70 to a K45, a K70 to a K38, a K70 to a K38\*, a K45 to a K38, a K45 to a K38\*, a K38 to a K38\*. The definition of green and traditional is therefore based on the K level and varies according to the model. For example in testing the model from K45 to K38\*, the K45 level is considered as the traditional level while the K38\* is used as the green level. The same way of thinking is applicable to the five others models.

Thanks to this definition, we will determine the number of years necessary to recover the initial extra cost for each model and evaluate if it is profitable or not.

### Scenario K70

This is the basic scenario which represents a conventional building without insulation and which is not in accordance with the present standard of insulation i.e. a K45 in Brussels in 2008.

### Scenario K45

For this intermediate scenario, we wanted to emphasize the importance of insulation. A building is not considered as green in this case because it is simply in accordance with the legislation in terms of buildings' certification.

### Scenario K38

With a K38 we have, under current regulations, a green building. Some passive measures are added to the building.

### Scenario K38\*

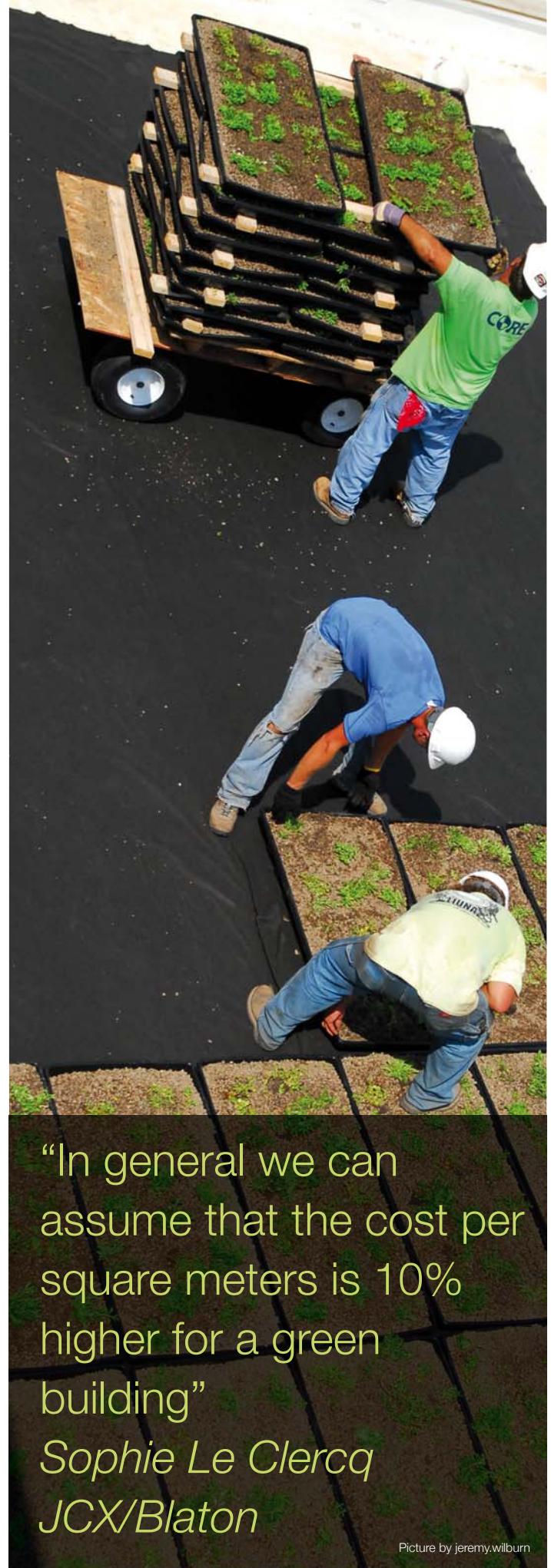
The building K38\* is greener than the K38 because we add solar panels and water measures (use rain water and reduce water consumption).

### Scenario K26

This scenario is a look towards the future. Indeed if K70 was the norm in the past, a K45 level of insulation has now been implemented for every new construction. K45 is currently easy to achieve, but the legal norm is expected to evolve.

As no K26 scenario has been built yet, we will limit our analysis to establishing that constructing such a building is a question of good sense. For example, taking into account environmental aspects before, during and after construction notably with the choice of materials in use is important. Emphasis should be put on local timber, recyclable concrete that has some advantages in terms of thermal insulation and thermal inertia for free cooling, etc.

Constructing a K26 building might look revolutionary but it will be a standard in the future. Those who have not sufficiently anticipated the development of the law and mentalities, when designing their building, will suffer from higher rental void and issues in terms of image.



**“In general we can assume that the cost per square meters is 10% higher for a green building”**  
**Sophie Le Clercq**  
**JCX/Blaton**

Picture by jeremy.wilburn

## Results

The graph below clearly present the return on investment for each model. As explained in "our definition" section, ROI are detailed to go from a K70 to a K45, a K70 to a K38, a K70 to a K38\*, a K45 to a K38, a K45 to a K38\* and a K38 to a K38\*.

In period T0, the extra cost is represented for each level of K. The return on investment is given by the intersection of the lines. A summary of those ROI is given in the table below.

With constant assumptions of an inflation level of 3% and increase in energy and water prices of 4%, the number of years for each scenario to become profitable clearly shows that insulation is the top priority, and more than a priority investment it is an obligation to comply with legislation.

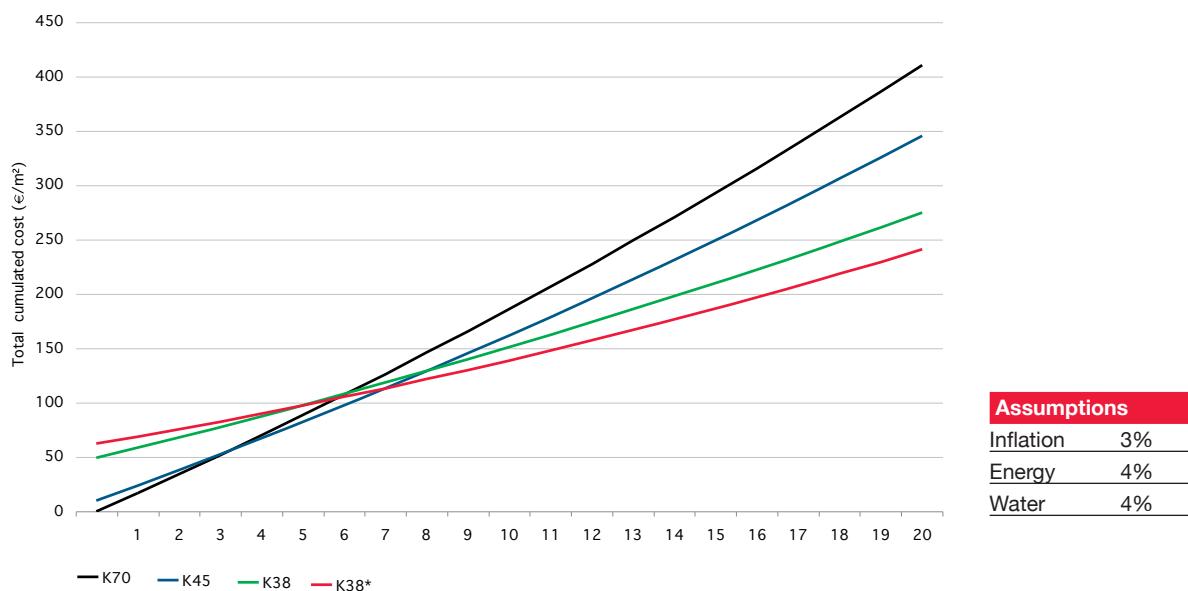
- Indeed, the first model going from a K70 to a K45 shows the importance of insulation. Such an investment is profitable within only three years. This result has been confirmed by a study made by KUL/3E in 2004 which emphasized the importance of insulation.
- For the next models, the rationale is rather simple: an increasing number of equipments implemented leads to a higher ROI. While only three years are necessary to go from a K70 to a K45, six years are necessary to go from a K70 to a K38, and seven years to achieve a K38\*.

These three first scenarios aim to show the importance of insulation. As a K45 is an obligation today, the next two models 4 and 5 will be considered more closely.

- Additional investments in order to achieve a level of K38 will become profitable in eight years. after this date, the decrease in charges, thanks to the green investment will start compensating for the initial extra cost.



Picture by thingermejig2



# Quantitative aspects

- The analysis shows that to go from a K45 level which is the legal norm in 2008 to a K38\*, nine years will be necessary to start making profits thanks to the green investment.

Nevertheless, investors generally want to see a positive return within five to seven years. Hence, if a tenant signs for a 15 years lease, it is probable that they will invest in such equipments whereas for a 3-6 years lease it is highly improbable. Therefore, the risk is that developers or investors will not make additional green investments because of a recover period which is too long. However, some could invest in order to enhance their image or bet on increasing energy prices.

- The last model, number six, clearly shows that adding water installations and photovoltaic panels to an already fully equipped building is absolutely not profitable as it will take eleven years to recover initial extra costs. This is too much time for tenants who generally do not plan to occupy a building for more than seven years. The paradox is that even though some investors know that investing in solar panels, water installations, windmills or Canadian wells is not profitable, they still do it. They justify this act by their commitment to be socially responsible, by the image they will give to people, and the good education they provide for the society.

## Sensitivity analysis

Obviously, factors such as inflation, variation in energy and water prices will affect the profitability of the investment. In order to quantify these variations we have tested several scenarios. The following table shows how variations in the inflation rate and the cost of water and energy will affect the return on investment for model 5 (from K45 to K38\*)

As shown in this table, higher energy and water prices lead to lower return on investment as it will allow a greater decrease in charges in the future. Nevertheless, the neutral assumptions of 3% inflation, 4% energy and 4% water remain the most plausible scenario according to industry actors' sayings.

Another issue is the possible variation of investment costs. Some actors are convinced that the increase in price of materials will be limited (or could even be negative) thanks to the development of new technologies, economies of scale and future progress in the sector. On the other hand, others believe that the growing demand for such green equipments will make their price increase dramatically.

Profitability			
Model	From	To	Years to profitability
1	K70	K45	3 years
2	K70	K38	6 years
3	K70	K38*	7 years
4	K45	K38	8 years
5	K45	K38*	9 years
6	K38	K38*	11 years

“Even though water installations make no sense economically, we will implement them as they are essential in an ecological and environmental approach.

They are commercially important to show our commitment to CSR”

*Martine Rorif &  
Rikkert Leeman  
Befimmo*

Sensitivity of Model 5 (K45 to K38*) to price variations			
Assumptions	Neutral	Optimistic	Pessimistic
Inflation	3%	2%	3%
Energy	4%	3%	6%
Water	4%	3%	6%
Years to profitability	9 years	10 years	8 years



Picture by miss~~♥~~kris

## Qualitative aspects



“Productivity and health gains provide more than 2/3 of the total benefits of green buildings”

*Jerry Yudelson<sup>1</sup>*

<sup>1</sup>. Yudelson J. (2008), The green building revolution, Island Press  
Picture by Doxi

On top of the purely quantitative factors we have detailed, a green building offers many others improvement that are often overlooked. These combined elements can sometimes render better indirect savings than the energy consumption reduction. Nonetheless, the main difficulty is to measure them accurately. We will review them and understand their impact on the day to day work.

## Productivity

The main “intangible” aspect cited as an added value of green building is the productivity increase. Although difficult to measure, the productivity increase has been cited by numerous studies as one of, if not the main, value creator element. The architecture involving natural lighting, the quality of the materials used, the ventilation systems ... all converge towards offering a healthier working environment. If a building can decrease absenteeism and enhance the working environment, the productivity of its occupants will inevitably increase. Studies on the subject in the USA have come up with productivity increase of 1 to 5% or 2 to 30\$ per square foot<sup>1</sup>.

If we translate these findings to the Brussels market, we can consider that an average employee will cost anywhere between 75,000 to 100,000€ per year to its company. Considering the lower-end of the possible productivity gain (1%) each employee could then achieve a gain of 750 to 1,000€ per year. If we translate this into square meters by considering that each employee occupy an average of 18 sq m (GLA), it generates an opportunity cost of 42 to 56€/sq m/year! This is roughly equivalent to a 15% decrease of total occupational costs of a company. As we mentioned previously, the extra cost needed to achieve a K38 in our example is less than 50€/sq m/year. This means that the productivity increase by itself could pay for the extra cost of a green building!

1. Examples of studies: Yudelson J. (2008), "The green building revolution", Island Press; Browning, William D. and Romm, Joseph J., (1994). "Greening The Building And The Bottom Line: Increasing Productivity Through Energy-Efficient Design", Rocky Mountain Institute and U.S. Department Of Energy.

## Recruitment and retention of employees benefits

This is an overlooked aspect of green buildings. Many companies record 10 to 20% employees turnover per year. Considering a staff of about 100 employees, turnover at this level could then be estimated from 10 to 20 people leaving per year.

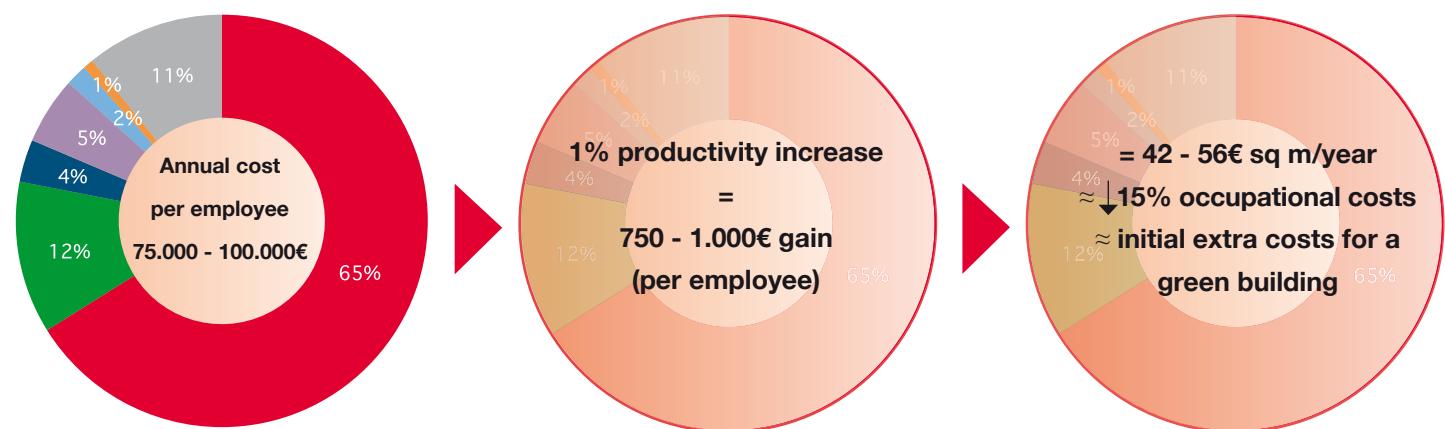
If a green building could reduce this turnover by 10 percent, for example, thanks to a more pleasant work environment, what would be the benefit?

Without considering the added-value of the remaining employee himself, we can also calculate the savings as the recruitment cost for an employee, as well as the training cost and the time necessary to make a new employee as productive as the former one. This is obviously an extremely delicate undertaking, but we can easily estimate these costs to several thousands of euro.

## Marketing & CSR

Aside from economical reasons, direct or indirect, one of the main drivers of green buildings today is the marketing aspect one derive from it. Interviews conducted with Belgian investors including Befimmo and Fidentia have proven that it is in fact the first reason why one should invest in green buildings for the moment. The recent launch of a specific green real estate fund by Fidentia follows this strategy. This fund has recently bought the most actively marketed green office building to date, the Solaris in Brussels.

The tenant point of view is slightly different of course but green buildings can play an important role in demonstrating its Corporate Social Responsibility (CSR). This concept is getting increasingly important amongst major companies and renting or buying a green building goes a long way to prove their dedication to the environment. On the other hand, with certification on the horizon, few major companies will be comfortable occupying a building widely known as low-grade in terms of sustainability.



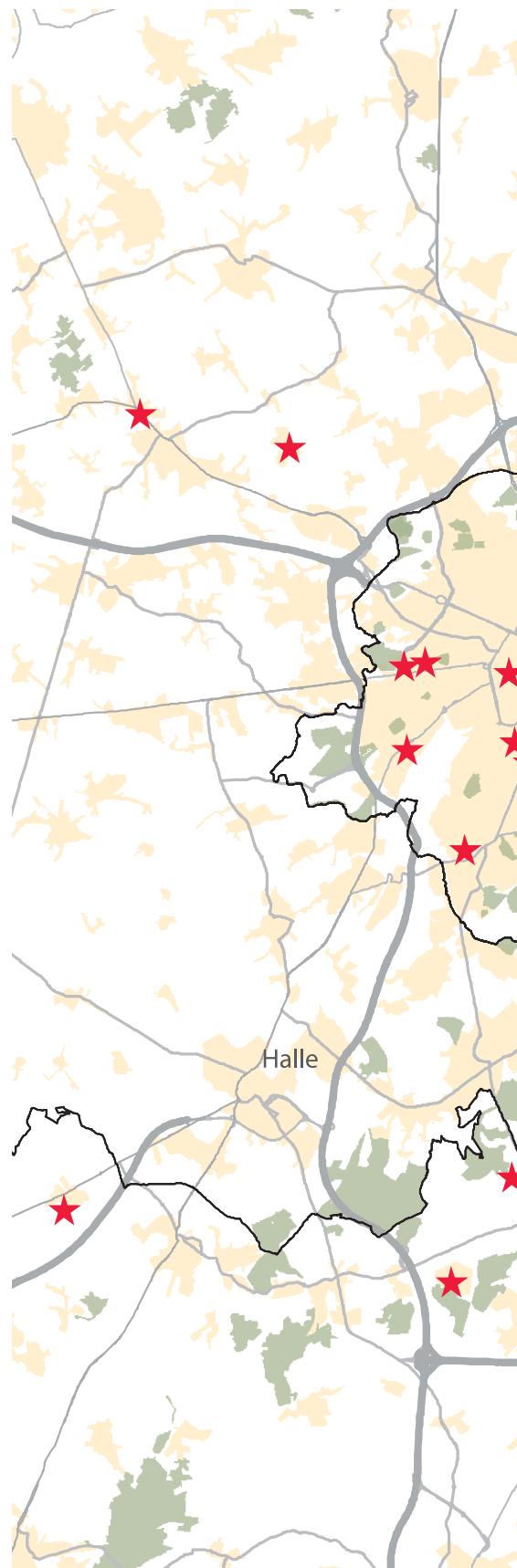
# Location Analysis

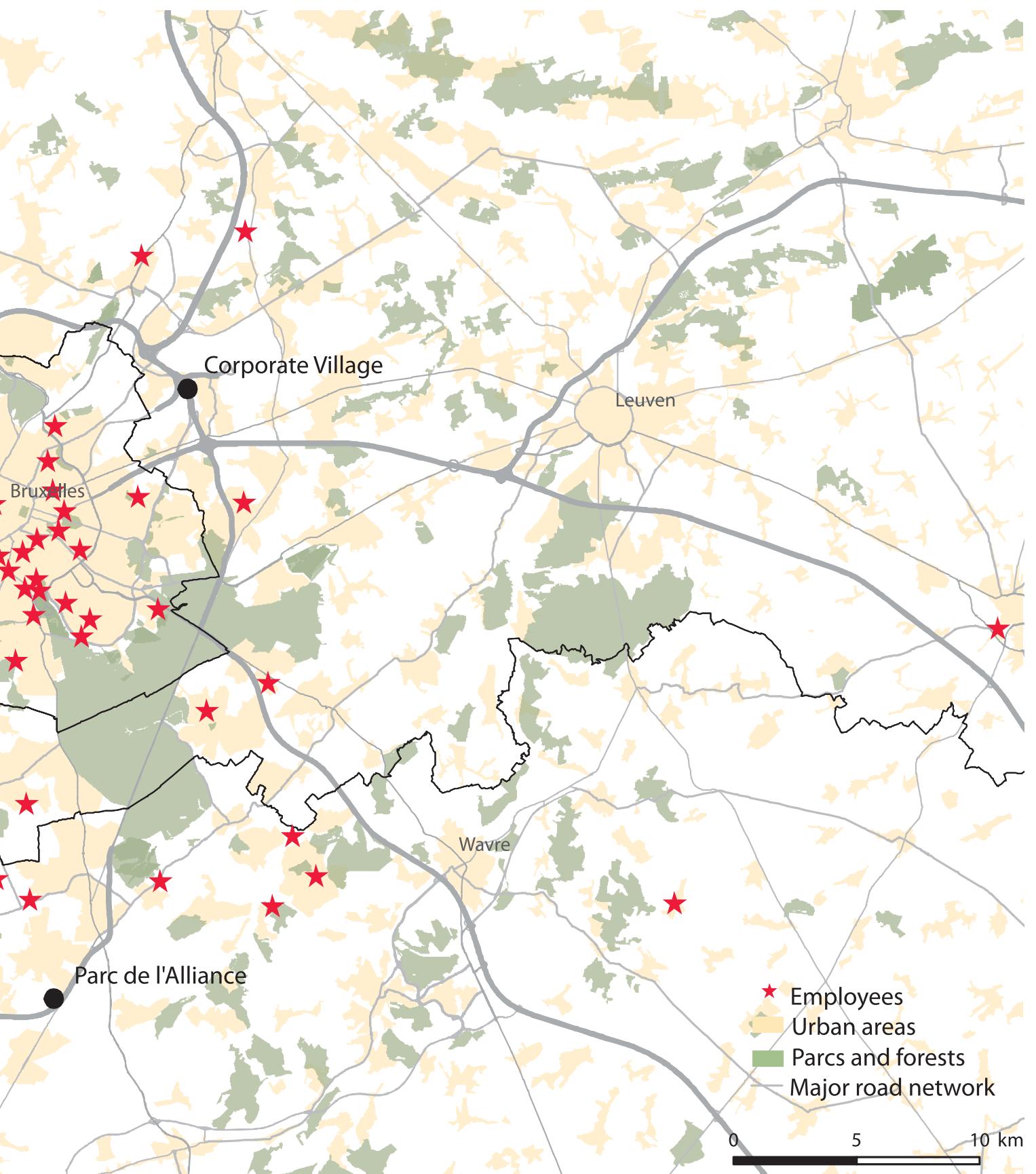
Among the factors that need to be taken into account when choosing a sustainable office building is its location. This key factor is too often disregarded. The main location factor that comes into play are the people working in the building. The workplace must be located in order to minimize the distances and the time spent commuting to work. Some other factors such as client accessibility or the prestige of the area will evidently play some role in the decision but only the commuting of employees really has a measurable economic impact.

The following map shows an imaginary distribution of 43 employees, using a company car, as well as two potential locations for their company. Using geographical tools, we can compute the sum of the kilometers these employees will have to travel in the best possible traffic conditions. The result is that the Corporate Village totals 300 km less than the Parc de l'Alliance. Although 200km doesn't seem much, when transformed into a price per year of 12,100€ the impact is more obvious. If we consider that the company employs a total of 50 people in a building that should roughly total 900 sq m, the economic impact resulting in choosing one location over the other then becomes 13.5€/sq m/year! Given the average rents in the Corporate Village, this could represent a saving ranging from 8% to 10% of the rent! Although this example is a rough estimate, it opens a new perspective when trying to reduce occupancy costs. The savings can indeed be much higher depending on the geographical distribution of employees. It will of course vary according to the importance of the car fleet within the company.

To grasp the full dimension of sustainability, one should also pay attention to the time spent commuting to work. Sustainability is also about giving the co-worker the best possible work environment, and that induces to minimize time spent commuting and the related stress. Hence, a thorough study of accessibility by public transports and car including traffic congestion is needed to obtain a building sustainable not only in an economical sense but also in a social and environmental sense. Indeed, choosing carefully your location in order to maximize the use of public transport and minimize the use of the car will also reduce the carbon footprint of a company. In the example above, the company could cut its CO<sub>2</sub> pollution by approximately 17,000 kg just by choosing the best location (not taking into account traffic congestion).

Aside from this "macro-analysis", a sustainable building also needs to minimize the disturbances to the direct environment it will be in.





# Space planning

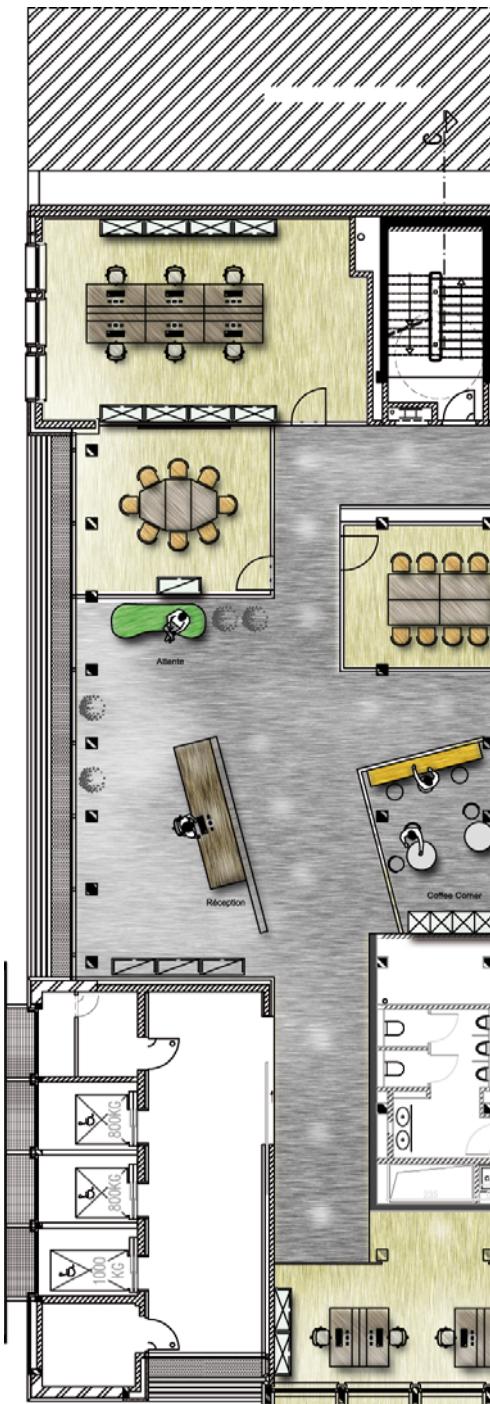
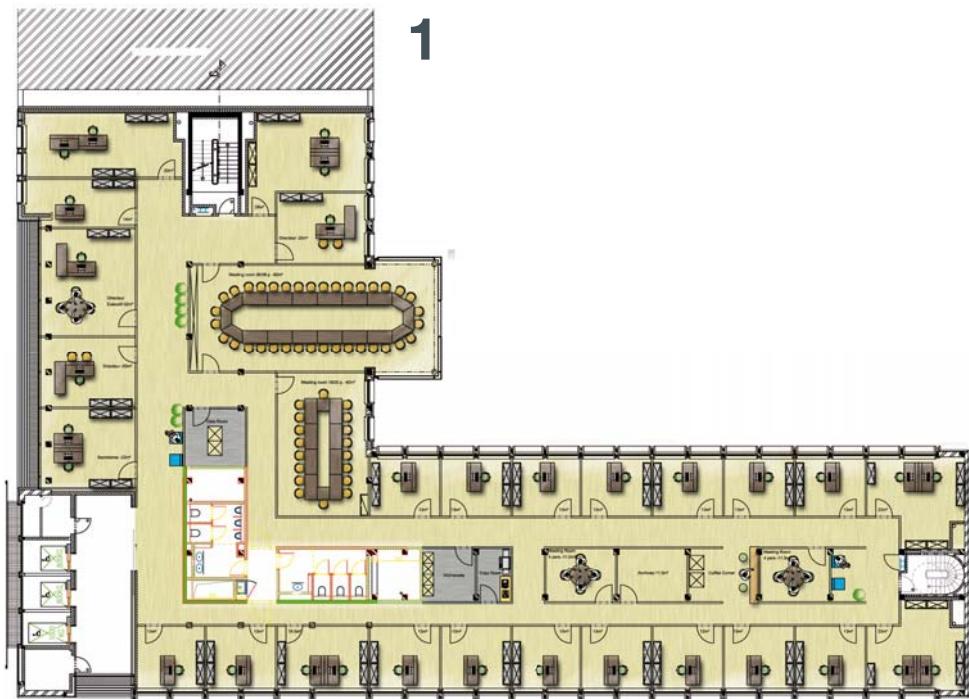
On top of choosing the right location for a building, another way to ensure sustainability without added costs is the rational use of space within an office building. An efficient space planning can often reduce the space needed by 30%. If we move towards the diminution of the space used (about 18 sq m per workstation in Belgium), it means people will be less dispersed amongst several buildings. This will therefore reduce the commuting as well as the overall quantity of space needed. The best way to limit pollution induced by the buildings a company may use is probably simply to reduce the number of buildings.

The example below proves how, within the same building, we can increase the number of people working in perfect condition and, at the same time, decrease the occupancy costs.

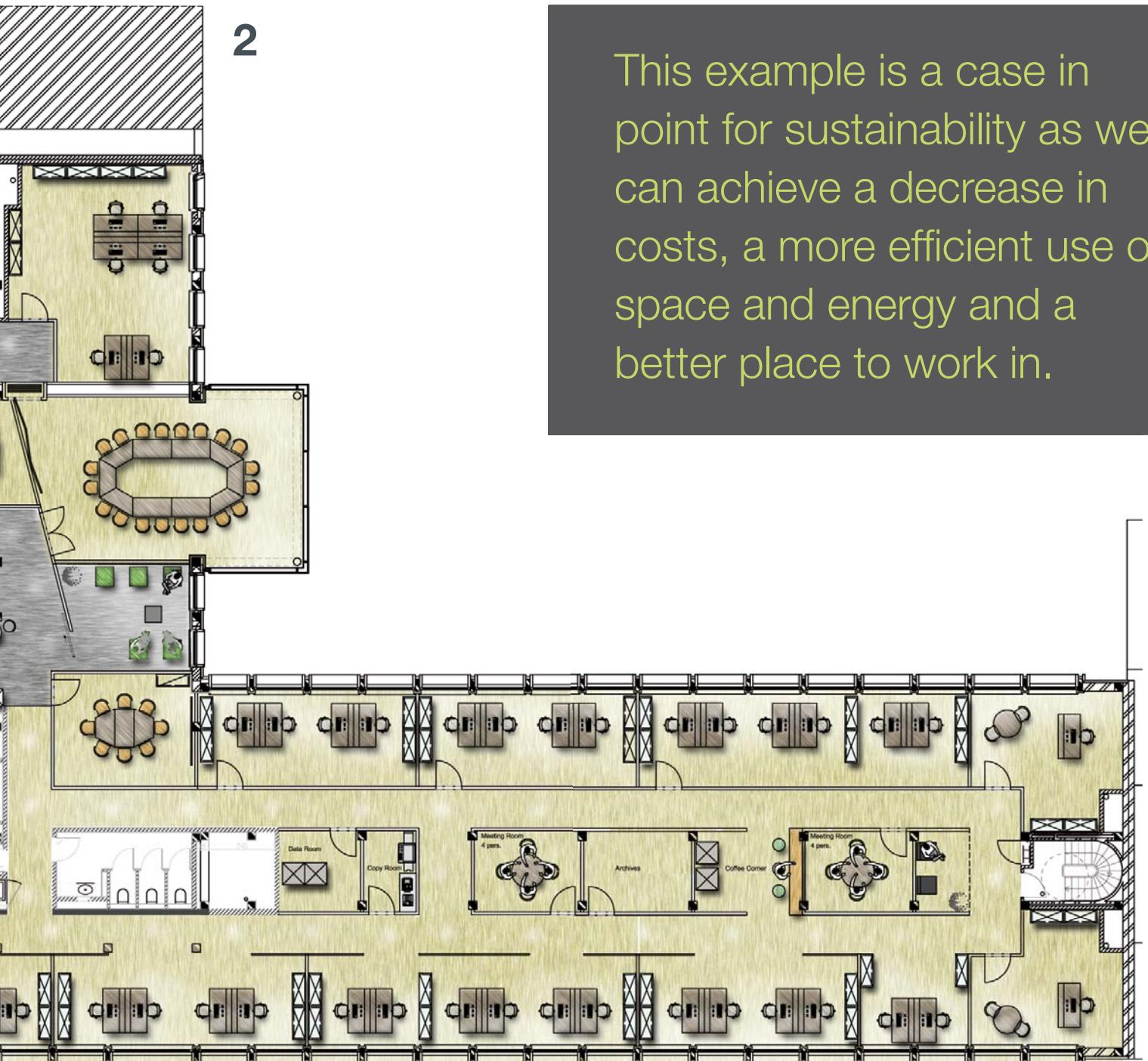
Let's imagine a floor space of about 600 sq m hosting 32 persons which represent a ratio of 18.75 sq m per employee (see picture 1). This floor plan is essentially composed of closed offices. Considering a rent of about €200/sq m a year and charges equivalent to €35/sq m a year, the global occupancy cost per employee could then be estimated to €4,400 a year.

A better, and more imaginative, space planning with more open spaces and adapted furniture (see picture 2) would relatively easily allow to host about 50 employees on the same surface, including a reception desk for the floor.

The occupancy costs per employees would then be proportionally lower. Indeed, considering a new ratio of 12 sq m per workstation, the global cost would then be €2,820 a year for an employee, reflecting an economy of more than €1,500 a year.



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This example is a case in point for sustainability as we can achieve a decrease in costs, a more efficient use of space and energy and a better place to work in.

# Property Management

The role of a property manager is a delicate one, he is asked to increase the sustainability of a building and decrease the charges at the same time, all this for an existing building in which he can't change all the technical aspects. The pressure from owners seems to increase these last few years as potential tenants now pay very close attention to charges whereas this was a secondary issue not so long ago.

The main input an efficient management can add to the sustainability issue is to optimize the building technical elements and the costs inherent to them. Indeed, all the technical elements in a building (heating, electricity, elevators ...) need to be regularly inspected and maintained, the property managers therefore hire companies to ensure this "technical maintenance". This maintenance will ensure that the building is optimized in a way to reduce its energy consumption.

However, managers are under pressure from owners to decrease charges. With maintenance contracts often accounting for 25% of common charges, property managers need to defend the sustainability cause in a tough economical environment often suffering from short term vision. Indeed, technical maintenance is clearly an essential factor in the long run but may be costly on a short term basis. Indexation clearly is an issue as it relates to primary goods which can cause strong increases of maintenance costs.

On top of the maintenance company, it is useful to hire a counsel-engineer to verify its work. The counsel-engineer has deep knowledge of the technical elements of buildings and will therefore be able to fine-tune their configuration and double-check the work done. Some fine tuning such as temperature probes are easily implemented and are very efficient for older building. However, there is no real demand coming from the owners at the moment towards more important improvements of their building in order to make them more sustainable. The sustainability movement is probably too young still in Belgium and all the players are waiting to see which way the wind will blow. Moreover, the debate is still open regarding the new technology maintenance, will-it be more or less expensive?

Nonetheless, the main problem with technical elements is not so much how they work but who are using them. Indeed, the users can dramatically change the energy consumption of a building and even a very efficient green building can show huge consumption if the tenants are not well educated. Too often, entire buildings are illuminated in the middle of the night or windows are open during the summer. Good technical element can help reduce these problems but, in the end, the user is the best improvement a building can have. In order to educate the tenants, the property managers may have a new tool in the future: Green Leases.

**"Maintenance costs are lower for green buildings"**  
*Sophie Le Clercq  
JCX/Blaton*

**"Maintenance costs will be higher for green buildings"**  
*Martine Rorif & Rikkert  
Leeman - Befimmo*

**"What is gained in terms of energetic consumption is transferred in the cost of services such as maintenance of new equipments"**  
*Thierry Kislanski  
Banimmo*



## Green Leases

Enhancing brand image, encouraging tenant-landlord debate and mitigating future building costs are proving powerful drivers for the concept.





## What is a green lease?

A green lease is essentially a normal lease between the landlord and tenant of a commercial building with an additional set of schedules governing the parties' environmental responsibilities. The schedules contain provisions whereby the landlord and the tenant undertake specific responsibilities/obligations with regards to the sustainable operation of a property – for example, energy efficiency measures, waste management/reduction and water efficiency.

Green leases originated, and are now commonplace, in Australia. The requirement for such a schedule became mandatory from September 2006 and has since been voluntarily expanded to incorporate the private sector.

### Model green lease terms

In general, the current thinking is that green leases will be concerned with issues of energy, water, waste, carbon and sustainable construction/refit materials. Typical green lease terms are expected to cover areas such as:

- **Energy Data Collation** - Tenant to provide energy and water use and Landlord to be allowed access to inspect efficiency of plant and machinery.
- **Alteration** - Tenant to covenant to not carry out alterations which adversely affect environmental performance of the building.
- **Service Charges** - Landlord to reserve right to adjust environmental aspects of a service charge relating to resource efficiency including rewarding energy saving.
- **Energy Efficiency Targets** - Creation of provisions for targets to be met - with increased service charge/rent for Tenant's breach and rent abatement for Landlord's breach.
- **Reporting** - Energy and Sustainability Performance reports should be periodically published.
- **Financial Incentives** – Rent rebates for the tenant can be included if a landlord fails to fulfil energy efficiency obligations.
- **Dispute Resolution Procedures** – Provision for the development of a remedial action plan where sustainability targets have not been met.
- **Separate Metering** – Provisions could be included that the Landlord will ensure that the premises are separately metered for electricity, gas and water services.

### What should you do?

Whilst there is currently no legal obligation to consider green leases, forward-thinking companies are beginning to appreciate the potential benefits of them and are starting to get involved in the debate. Enhancing brand image, encouraging tenant-landlord debate and mitigating future building costs are proving powerful drivers for the concept.

## Green Buildings – Belgian examples



**“I believe traditional buildings will experience an intrinsic capital loss because of the implementation of green certificates and will also meet a higher rental void” Henry Legrand**

*Fidentia Real Estate*



Few Green buildings have been erected in Belgium so far and it is therefore difficult to collect comparables in terms of rents or price.

Nevertheless, we have observed an increasing interest for sustainable developments among investors as well as developers. Some sustainable office developments are now on the tracks, one of the most notable being the **Solaris** building. This development totaling more than 8,000 sq m is currently under construction and should be delivered in 2009. The property will achieve good environmental performances, with regards to construction, materials, energy, water, maintenance, waste, etc. The **Solaris** property is expected to obtain a voluntary certification making it one of the first certified “green building” properties in Brussels. Developed by Herpain-Urbis, the Solaris has been sold in 2008 to the Belgian investor Fidentia.

Another interesting example to be located in Brussels will be the **Premium** project, developed by Atenor near the Brussels Canal and the North Station. Although this mixed development totaling about 80,000 sq m is still awaiting permits, nearly half of it is already let or sold. This clearly indicates that there is a strong interest for sustainable buildings among tenants or occupiers, especially near big public transport infrastructure.

Next to this future development is located the **Waterside**. This building was delivered in 2007 and was presented as the first ecological building thanks to various environment-friendly features. Developed by Pylos, the Waterside has been sold to Irish investors but is still waiting for tenants.

Also worth mentioning is the rehabilitation of the **Telex Building**, located in the centre. The aim of its owner, Befimmo, is to give a new life to this building erected in the 60's. The priorities of Befimmo are to develop a cutting edge sustainable building while also respecting the building's historical architecture. Being located in the centre of Brussels this building is reachable by all public transport such as metro, bus and train.

The **Wielemans-Ceuppens** site is another good example of rehabilitation. This old brewery located near the Midi station will be progressively redeveloped into a mixed use scheme comprising, residential areas, cultural amenities as well as Green offices.

Finally, we can mention the construction of the new Mobistar headquarter (**Sirius**), totaling nearly 30,000 sq m in Evere (East of Brussels). Developed by Banimmo, the building will respect higher environmental standards and should be operational in the second half of 2009.

These examples are certainly not exhaustive, other environmental friendly buildings being developed for own usage such as **Wilhelm & Co** or **Caméléon**, the latest being a mixed retail development.

Outside Brussels too, some Green office buildings have already been developed. In the Southern part of the country notably, the most famous example is the **Eole** Building, located in the Aeropole near Charleroi and the Brussels-South airport. But other interesting developments are on the tracks, notably in the WEX zoning located in Marche-en-Famenne, by local developer Thomas&Piron.

DTZ Research  
Avenue Louise 380  
1050 Brussels  
Telephone: +32 (0)2 629 02 00  
Fax: +32 (0)2 647 19 78  
[www.dtz.com/research](http://www.dtz.com/research)

## Contacts

	Telephone	Email
Consulting & Research	+32 (0)2 629 02 85	<a href="mailto:emeric.inghels@dtz.com">emeric.inghels@dtz.com</a>
Emeric Inghels Vincent Leroux	+32 (0)2 629 02 86	<a href="mailto:vincent.leroux@dtz.com">vincent.leroux@dtz.com</a>

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