The way to a healthy building

with the WELL Building Standard

White paper
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BBA Binnenmilieu
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The demand for healthy and comfortable buildings grows. According to PriceWaterhouseCoopers[1] 'bricks and location' will no longer determine the price of future buildings, but flexibility, usability and quality of the accommodation will. In this matter they regard health, wellbeing and sustainability as one of the utmost price determinative factors:

> *"Health, wellbeing, sustainability merge as a key driver of real estate value"*
> *PWC, 2016*

However, how do you attain a healthy and comfortable building, how do you demonstrate the building as being healthy, and how can you select a healthy building as a building user. WELL, a new hallmark for healthy buildings, offers answers to all these questions.

Introduction WELL Building Standard

The WELL Building Standard contains 100 demands to achieve a healthy and comfortable working environment. The WELL Building Standard was developed by the American real estate organisation Delos and was assigned to the International WELL Building Institute (IWBI, https://www.wellcertified.com/) in 2014.

The hallmark is the result of a seven-year study regarding the effect of work station related factors on wellbeing. Only those aspects supported by sufficient scientific proof that they affect health or wellbeing positively, are included in the WELL Building Standard. Subsequently, a three-year peer review was performed by renowned physicians, scientists and professionals from the industry. The result is a standard with grounded, evidence-based, performance demands for a healthy and comfortable working environment.

Evidence-based

With respect to the definition of health and wellbeing, WELL is in line with the definition of health given by the World Health Organization:

> *"health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity."*
> *World Health Organization, definition 'health'*

[1] PWC (2016) *"Emerging Trends in Real Estate - New market realities - Europe 2017"*, http://www.pwc.com/gx/en/asset-management/emerging-trends-real-estate/europe/emerging-trends-in-real-estate-2017.pdf

So WELL is not about preventing health threatening situations but about realising buildings that *increase* the wellbeing of the building users. In order to achieve this, WELL chooses a holistic approach. The WELL Building Standard does not merely set requirements for the classical matters, such as air quality (Air), lighting (Light) and thermal & acoustical comfort (Comfort), but also for water quality (Water), food (Nourishment), exercise and activity (Fitness) and mental health (Mind). The reason for the choice of these seven themes is that research of WELL/Delos shows that these seven themes have a demonstrable effect on the wellbeing of office workers.

What advantages does WELL offer …

… the building user?

A WELL-hallmark proves that the working environment meets certain demands on the area of wellbeing and health. These achievements are checked (measured) by WELL in practice. This way, a building user has the certainty that he or she works in a comfortable and healthy environment. More specifically, this means for instance a working environment in which it is not too warm or too cold, where the air quality is well and there is sufficient greenery.

… the employer?

WELL offers several advantages for employers:

- Because of the comfortable and healthier working environment employees are more satisfied, their productivity is higher and their sick leave is lower. For more information, see the productivity effects in the framework on the next page.
- WELL helps with the choice of healthy accommodation. In advance, when someone is looking for new accommodation, it is difficult to determine at a glance if the building offers a pleasant working environment. With the aid of the WELL-hallmark it would be clear at first sight which buildings are evidently healthy and comfortable.
- Seeing that WELL includes not only the building, but also for instance nourishment, exercise and mental health, WELL can also be applied as an aid towards a healthy working and accommodation policy. The WELL-demands can then be compared to the organisation's health policy to determine if and where there is room for improvement.

… the developer, investor or proprietor?

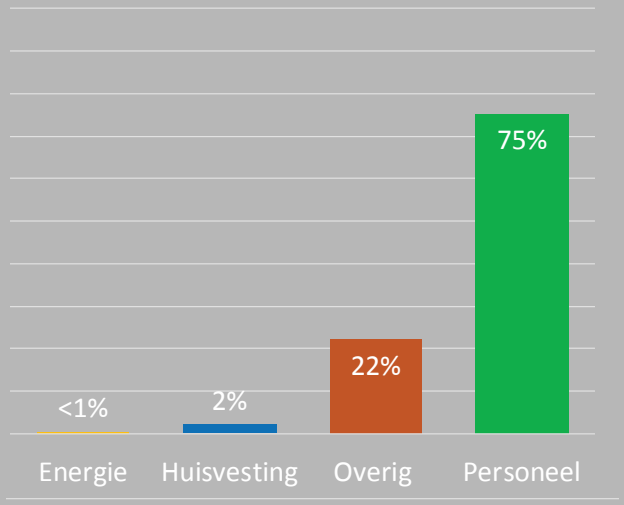
As developer, investor or proprietor, WELL helps you gain insight into your building's degree of health and wellbeing. With this insight, it is possible to make your building stand out. Also, it offers the opportunity to finally demonstrate extra investments made in wellbeing and health to potential tenants/buyers.

Construction costs or rent are not interesting - it revolves around productivity

+ 1% productivity
=
+ 50% rent

Usually, when constructing or renting a building, people pay special attention to the costs of the investment and the price of the rent. However, housing costs are only 2% of the total operating expenses. Personnel expenses, on the other hand, cover **75%** of the operating expenses. Imagine the user of a WELL certified building has a 1% higher productivity. The housing costs can then increase from 2% to 3% without the operating expenses increasing. This means that a building enabling a 1% productivity gain, could cost 50% more without any consequences for the net operating expenses of the tenant!

Verdeling bedrijfskosten
dienstverlenende sectoren in Nederland



source: Statistics Netherlands, The Hague/Heerlen 2-1-2017 - 'gemiddelde bedrijfskosten voor branches J & N - 2014'. The personnel expenses include purchasing value turnover.

In practice, a productivity increase of 1% is easily accomplished: when room temperature is decreased from for instance 26 °C to 25 °C, productivity will already grow by 2%. Below, you can find several examples of expected effects in productivity when the WELL-demands are applied[2].
As a matter of fact, productivity is more than doing more work in the same time span. Productivity means the increase of general performance. This also results, for instance, in fewer mistakes or in faster or better decisions during a meeting.

	Potential productivity effect*
Thermal indoor climate:	
- Good temperature (not too warm, not too cold)	+ 2,5 %
- Sufficient influencing possibilities with regard to temperature	+ 4 %
Indoor air quality:	
- Sufficient fresh air flow	+ 4 %
- No pollution sources inside	+ 3 %
Sound and acoustics:	
- No hindrance by meaningful sound (voice)	+ 7 %
- No hindrance by other sound	+ 2,5 %
Light:	
- Sufficient artificial light	+ 3 %
- Good daylight screening	+ 5 %

** Productivity effect in case of the worst-case (class D) vs. best-case (class A) scenario[2]. These are separate productivity effects.*

[2] BBA Binnenmilieu (2015) Kengetallen Binnenmilieu en productiviteit, Platform 31, http://www.kantoorvolenergie.nl/wp-content/uploads/downloads/2015/10/BBA-Rapport-Kentallen-binnenmilieu-productiviteit-151015.pdf

How does WELL-certification work?

In short, WELL-certification works as follows: in advance you make performance demands. The design team or proprietor guarantees that the demands are met. Next, by means of measurements, a WELL Assessor checks whether or not the demands are indeed met. Then you receive the WELL-certificate. In order to keep the certificate, you need to be certified again after three years. Below, we further illustrate the process.

The certification process counts five mandatory steps and one optional step:

0 Optional – Precertification
1 Registration
2 Delivering evidence
3 Verification measurement performances
4 Certification
5 Recertification within 3 years

0. Precertification

Because there are costs involved with registration, you have the possibility to go through a precertification process before registration (WELL Precertification). This way, you receive as much clarity as possible in advance in the possibilities of receiving the desired WELL-certificate. In the precertification process, you can indicate, for each WELL Feature, how you think to achieve this Feature. When a WELL-certificate seems feasible with the described approach, the project obtains the WELL Precertification Level and you receive an award. If the WELL-certificate, however, does not seem feasible to the WELL Assessor, the Assessor will indicate which areas of the design need alteration.

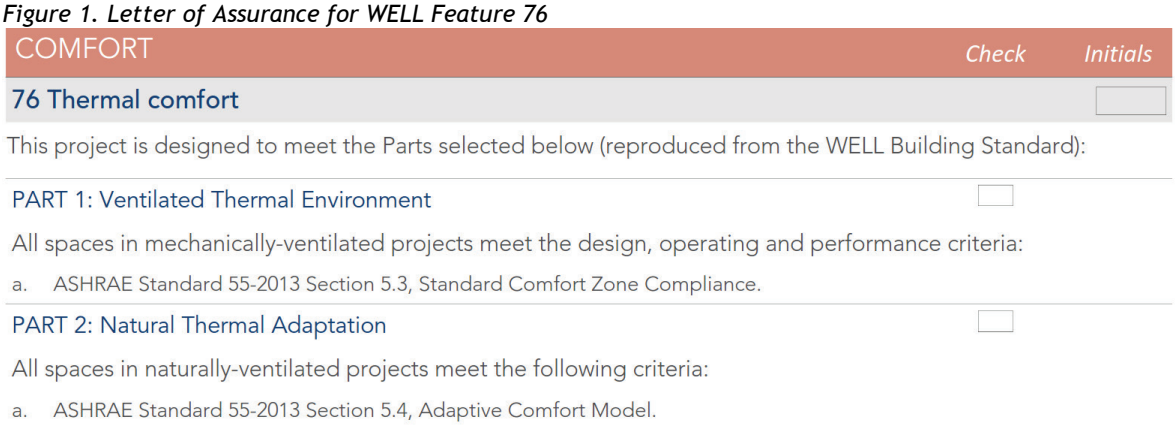
1. Registration

By registering the project at the International WELL Building Institute (IWBI), you indicate pursuing a WELL-certificate. After registration you will be assigned a WELL Assessor.

2. Delivering evidence

In order to show that the by WELL required performances are achieved, a design team or proprietor needs to deliver evidence. The burden of proof is quite restricted: for most Features a Letter of Assurance suffices (see figure 1). In a Letter of Assurance a member of the design team indicates with a signature that the building meets the requirements of the WELL Features for which he or she is responsible. The installer or installation advisor, for instance, must guarantee that the thermal indoor climate meets the requirements of WELL Feature 76 (thermal comfort). This means that the installer does not need to perform measurements or to distribute a report that proves that the demands are satisfied, which is often the case with other hallmarks. This way the project team's burden of proof stays limited.

Figure 1. Letter of Assurance for WELL Feature 76



COMFORT	Check	Initials
76 Thermal comfort		
This project is designed to meet the Parts selected below (reproduced from the WELL Building Standard):		
PART 1: Ventilated Thermal Environment		
All spaces in mechanically-ventilated projects meet the design, operating and performance criteria:		
a. ASHRAE Standard 55-2013 Section 5.3, Standard Comfort Zone Compliance.		
PART 2: Natural Thermal Adaptation		
All spaces in naturally-ventilated projects meet the following criteria:		
a. ASHRAE Standard 55-2013 Section 5.4, Adaptive Comfort Model.		

Apart from the Letter of Assurance, some Features do require supplementary evidence. This mainly involves the process-oriented Features aimed at the exploitation of the restaurant, the fringe benefits and the integration of art and nature into the design. These Features require a document that concisely describes the way in which the WELL-demands are integrated into the business process or design. The documentation will be sent to the WELL Assessor to be assessed. As soon as the evidence is approved, the verification measurement (WELL Performance Verification) can be planned.

3. Verification measurement performances

To be sure that the building meets the WELL-requirements around the time of occupation, the US WELL Assessor comes to the Netherlands to perform verification measurements and inspections (WELL Performance Verification). This involves for instance measurements in air quality, lighting intensity, sound levels and temperature. By means of inspections, the assessor evaluates whether or not the required WELL-provisions are (soundly) integrated into the design. When the performances meet the WELL Features, you receive a WELL-certificate.

4. Certification

Different WELL-certificates can be obtained, depending on the situation. In order to decide which certificate is applicable to your building, the typology must first be chosen. Table 1 shows the demands and features of the different typologies. The most elaborate edition, New and Existing Buildings, is meant for buildings in which the occupant pursues a WELL-certificate for the entire building. New and Existing Interiors applies to the situation in which only a part of the building is relevant to the WELL-certificate.

In order to achieve the certificate, active cooperation of the occupant/tenant is required in the pursuit of both New and Existing Buildings and Interiors. In case the building user is either uncooperative or not yet known, the Core and Shell-certificate can be a solution. As the name of this certificate suggests, only core and shell related requirement need to be met and cooperation of the user is not necessary. An important note to Core and Shell is that the WELL-requirements concern the general areas, such as the lift area and the lobby.

For all three typologies, three certificates can be obtained: Silver, Gold and Platinum. Silver means all mandatory Features are met, the Preconditions. By satisfying the Preconditions and also 40% of the Optimizations, you can obtain Gold. Having met 80% or more of the Optimizations leads to a Platinum certificate.

Table 1. Features of the various WELL typologies

Typology	Number of Features (credits)		Demand ownership situation	Cooperation tenant/occupant mandatory?
	Preconditions (mandatory)	Optimizations (optional)		
New and Existing Buildings	41	59	≥ 90% floor area in use by owner	Yes
New and Existing Interiors	36	62	None	Yes
Core and Shell	26	28	≥ 75% floor area in use by tenant	Not mandatory, but desirable

5. Recertification

In order to guarantee that the building continues to meet the WELL-requirements, the International WELL Building demands cooperation in a shortened certification procedure after 3 years. During this procedure it is possible to obtain more WELL Features than during the original certification process, enabling the chance to a higher ranked WELL-certificate for the next 3 years.

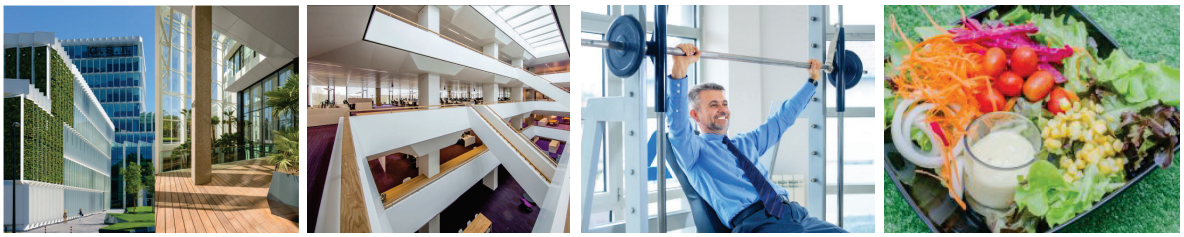
Is my building suitable for WELL?

Roughly two preconditions can be stated that need to be met by all means when pursuing a WELL-certificate.

1. *Ambition level minimum class B.* Different WELL Features require of you to meet demands comparable to class B-demands from current standards. Are you designing a building based on the level of the Building Decree, then the ambition levels lie below the WELL-requirements and you will probably not obtain a WELL-certificate (nor a healthy and comfortable working environment).
2. *Accessibility for the disabled.* In order to obtain Feature 72, the building needs to be accessible to the disabled. In the Netherlands, you meet this requirement when the building meets the Integral Accessibility Standard (ITS), (http://www.pbtconsult.nl/integrale-toegankelijkheid-standaard-its). Often, a building does not completely fit this standard, and the obligatory Feature 72 cannot be obtained. This basically means that a WELL-certificate is not within reach.

If a building meets the demands described above, a WELL-certificate is often feasible. If you desire a high WELL-score, then it is also important to integrate the following aspects into the building:

- (The integration of) nature in and around the building;
- Stairs that stimulate walking stairs;
- Heating and cooling with a system based on radiation;
- Working areas with a maximum depth of 7,5m from the façade;
- A canteen/restaurant with healthy food and drinks;
- A work out area in the building;
- The use of low emission material;
- Artificial lighting that meets the requirements from NEN-EN 12464-1;
- Maximum reverberation time of 0,5s.



The information described above applies to the pursuit of a WELL-certificate for office buildings. There are different demands when it comes to shops, apartments, schools, restaurants and commercial kitchens.

What does WELL cost?

The costs of WELL-certification can be easily calculated with the online calculator: https://wellonline.wellcertified.com/node/add/pricing

Please keep in mind that the certification costs of WELL include the Performance Verification. For other hallmarks the project team usually performs these measurements, which causes the consultancy costs to be higher, but the certification costs to be lower.

The costs regarding implementation of WELL-measures differ per building.

No WELL, but still a healthy building / healthy organisation?

In case you do not desire a WELL-certificate, but do want to stimulate health within the building or organisation, the WELL Building Standard could function as a guide. The WELL Building Standard describes very precisely which aspects you should consider when tempting to achieve a healthy working environment. From here on, you can pick the relevant items for your working environment, and set up performance demands of your own.

To make sure that you actually achieve the desired performances, it is strongly recommended to use WELL's procedure:

1. In advance, capture clear performance demands in a Program Requirements Document;
2. Check whether or not it is probable that the design will meet the intended demands;
3. On completion, check whether or not the recorded demands are met by means of measurements.

WELL and DGMR, how can we help you?

DGMR/BBA Binnenmilieu can guide clients in the process of WELL-certification. We can draft the health ambitions together with you, make sure that the design team members meet the required performances and provide communication with the International WELL Building Institute.

During the design stage, by means of a Gap Analysis, we can provide insight into which WELL-score you could obtain with the design. In case you desire a higher WELL-score, we can take measures to obtain these desired ambitions.

Even if you do not pursue a WELL-certificate, but do seek a healthy working environment, we can provide you with consultancy. Based upon an ambition workshop, we will draft a customised Program Requirements Document. Then, we will carry out audits in order to decide whether or not the desired design will achieve the desired performances. On completion, we will conduct measurements to check whether or not the desired performances are achieved.

Our experience

DGMR/BBA Binnenmilieu has years of experience in realising pleasant and comfortable living, learning and working environments. To DGMR, it was only natural to take up WELL and to be the first in the Netherlands to train a WELL Accredited Professional (WELL AP™), someone with demonstrable knowledge of WELL.

At this moment, DGMR and BBA Binnenmilieu work for several property developers and investors, but also for building users, on various Dutch and foreign projects, in which the implementation of WELL is being pursued. By means of a Gap Analysis we have studied the extent to which a WELL-certificate is in reach for existing and new buildings. In future developments, WELL will be implemented from the beginning of the process.

DGMR is also Consulting Founding Partner of the Blue Building Institute (BBI). Together with this institute, DGMR works on the translation of the American WELL-requirements to the Dutch situation. For instance, not all features can be used 1 on 1 in the Netherlands, and DGMR is regularly in contact with IWBI about the extent to which corresponding standards are applicable. An example of this is the accessibility of buildings according to the Integral Accessibility Standard (ITS) instead of the American ADA-requirements, in which DGMR/BBA Binnenmilieu has provided equality.

Aside from WELL, DGMR's daughter company BBA Binnenmilieu has been studying health and wellbeing in buildings for over 20 years. Think for instance of studying and reducing complaints in specific buildings, consulting in the area of new housing development in developing a system for micro climatizing (the JEP! System of the Van Delft Groep[3]). Well-known clients, for example, are Rijkswaterstaat and The Central Government Real Estate Agency (*Rijksvastgoedbedrijf)*.

Apart from the already known BREEAM and LEED-certifications, DGMR/BBA Binnenmilieu now also provides certification on all aspects of sustainability and health.

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www.dgmr.nl
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[3] See: https://www.youtube.com/watch?v=FchH4V08OoA