

Blue Building and DGNB-Certification Standards and Benefits



www.aebrus.ru

The Association of European Businesses



Frank Schauff AEB Chief Executive Officer

Opening words



Cornelia Reibach-Stambolija Deputy Head of Austrian Trade Commission in Moscow

Opening words

The Association of European Businesses



Guy Eames CEO RuGBC Russia

Overview certifications systems in Russia



Growth of the Green Building Industry in Russia

Guy Eames - CEO Green Building Council Russia (RuGBC)

What are Green Buildings?

Our Definition:

- 1. Maximise Resource Use
- 2. Minimise Environmental Impact
- 3. Maximum Comfort to users





Green or Blue?

"Green"

- Typically certified to LEED / BREEAM

(Complex rating tools)

- Green Roofs
- Rainwater harvesting
- Low energy use
- Comfortable
- Over 100,000



"Blue"

- LCA Approach

(materials, energy)

- Architectural merit
- Social Implications
- Economic Benefits
- More advanced approach
- DGNB



Benefits

Design and Construction Costs

Asset Value

Operating Costs

Workplace Productivity and Health

Risk Mitigation



http://www.worldgbc.org/activities/business-case/



Russia

- Start in 2009
- First Certified buildings SKF Tver, Ducat III
- Sochi Olympics
- Skolkovo 4
- Freedom House
- Passive HouseButovo
- Siemens Office
- JLL Office
- Deutsche Bank LEED
- Triumph Park (1m m2)
- FIFA Stadia?



http://www.rugbc.org/assets/files/2019/original/ENG-RuGBCNews_2-06smFINAL.pdf?1363352253

Russia



- Industry Growth by projects
- Colossal Number of events
- Great Interest Periodicals
- Tours
- Green Building Materials

Drivers



- National Projects
- Private Developers
- Corporate owner-occupiers
- Speculation
- Pride / EE



| SHEROOR . | | 1. |
|-----------|--|----|
| | No. 1 No. 1 Constant Status Co | 38 |
| | | |
| | | 60 |
| | | |



Attitudes - Ernst & Young Survey



На рынке недвижимости ваша организация представлена чаще всего в роли:



6. Обладают ли специалисты вашей компании знаниями о преимуществах и недостатках реализации проекта в соответствии с одной из международных рейтинговых систем экологической сертификации (например: BREEAM, DGNB, LEED)?







8. Реализация проекта в соответствии с одной из международных рейтинговы систем экологической сертификации (например: BREEAM, DGNB, LEED) ...



9. Ваша организация видит финансовую выгоду от реализации проекта «экологического» строительства и готова нести дополнительные затраты на строительство (% от затрат на строительство)?



 По вашему мнению спрос на недвижимость, сертифицированную по международным системам экологической сертификации (например: BREEAM, DGNB, LEED):

| | Процент ответов | |
|--|--------------------|--|
| Высокий и будет расти | 8,3% | |
| Низкий, но будет расти | 63,9% | |
| Низкий и не изменится | 5,6% | |
| Практически отсутствует и в течение 1-2 лет не изменится. | 22,2% | |

RuGBC



- Leading Industry Association
- Member of World GBC (97 countries)
- 7 Multilingual staff
- 300 members since opening in 2009
- Awareness / Standards / Community
- Initiatives Sochi 2014, Fifa 2018, Green Office, Park Russia
- WGs, numerous events



wwww.rugbc.org



Thank You!

www.facebook.com/rugbc facebook



Gerald Sakuler RSABC Executive Board – DGNB Delegate

DGNB in Russia; plans, structure and goals

The Association of European Businesses



Philipp Kaufmann CEO ÖGNI/DGNB Austria

DGNB in general



DGNB in General

Philipp Kaufmann









of the earth's surface is occupied by cities

of the world's population lives in cities

of the world's Co2 emissions are produced by cities

Immobilien am Anlagenvermögen



40% Energieverbrauches

Emissionen

Krankheiten





Key drivers are international companies

- Corporate Governance and CSR
- Big projects in the CEE region

Theses for the relevance in CEE:

- More than green: Sustainability is the target!
- New Buildings and existing stocks
- Holistic approach: more than buildings (urban planning, regional development and the 3 P-strategy)

Target for all activities





Light houses

or a way of doing?

Sustainability is more than green: blue!

Cities and Buildings – the opportunity









Cities are responsible for 70% of global total energy consumption, and buildings for 30-40% The real estate and construction business are responsible for 33% of CO2 emissions Buildings represent 50% of raw material consumption

The need for speed: life cycle (!)



From talk to action - accelerated speed:

- Assessment tools and methodologies
- Rating Tools (LEED, DGNB, etc.)
- Sustainable Products with new declarations (e.g. EPD)
- Financial solutions (TCO)



Financial solution through life cycle costs





Quality Dilemma (1)





Items of sustainability?





Benchmarks?



The answer: rating tools





Sustainability: 3 Ps approach





Change of paradigm









Evaluation and award of the certificate









- 1 Global warming potential (GWP) \rightarrow Climate change
- 2 Ozone depletion potential (ODP) \rightarrow Hole in ozone layer
- 3 Photochemical ozone creation potential (POCP) \rightarrow Summer smog
- 4 Acidification potential (AP) \rightarrow Forest dieback
- 5 Eutrophication potential (EP) \rightarrow Algae growth
- 6 Local environmental impact
- 8 Sustainable use of resources / wood
- 10 Non-renewable primary energy demand
- 11 Total primary energy demand and proportion of renewable primary energy
- 14 Drinking water demand and waste water volume

15 Land use



| 1 | Global warming potential (GWP) | LCA – Ecol |
|----|---|------------------------------|
| 2 | Ozone depletion potential (ODP) | building con |
| 3 | Photochemical ozone creation potential (POCP) | compliance ISO 14040 a |
| 4 | Acidification potential (AP) | lacomonator |
| 5 | Eutrophication potential (EP) | lifecycle stag |
| 6 | Local environmental impact | Construct |
| 8 | Sustainable use of resources / wood | • Operation |
| 10 | Non-renewable primary energy demand | & disposal, i repairs and |
| 11 | Total primary energy demand and proportion of renewable primary energy | • End-of-Lif recycling an |
| 14 | Drinking water demand and waste water volume | all building r |
| 15 | Land use | |

ogical f the physical nponents in with **DIN EN** and 14044.

s all involved ges:

tion

incl. supply maintenance, replacements fe incl. d disposal of materials



| 1 Global warming potential (GV |
|--------------------------------|
|--------------------------------|

- 2 Ozone depletion potential (ODP)
- 3 Photochemical ozone creation potential (POCP)
- 4 Acidification potential (AP)
- 5 Eutrophication potential (EP)

6 Local environmental impact

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The DGNB Certification System determines and evaluates **high-risk material** and substance groups.

- Halogens and halogen bonds
- Heavy metals
- Organic solvents
- Substances and products included in the European Biocidal Products Directive
- Substances and products listed in REACH as harming water, soil, and air or detrimentally affecting or generally endangering the environment

| 1 | Global warming potential (GWP) | Typical ecologica |
|----|--|--|
| 2 | Ozone depletion potential (ODP) | - criterias: |
| 3 | Photochemical ozone creation potential (POCP) | Useage of sustainable wood Reduction of drinking water demand |
| 4 | Acidification potential (AP) | |
| 5 | Eutrophication potential (EP) | |
| 6 | Local environmental impact | Reduction of lanc use |
| 8 | Sustainable use of resources / wood | |
| 10 | Non-renewable primary energy demand | |
| 11 | Total primary energy demand and proportion of renewable primary energy | |
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| 15 | Land use | |

Economic Quality



16 Building related life-cycle costs

17 Suitability for third-party use



Building-related life-cycle costs are determined at **net present value** over a period of 50 years:

- Selected construction costs
- Selected occupancy costs
- Selected operation costs (supply and disposal, cleaning, operation, inspection and maintenance)
- Selected repair costs

Neue Deutsche Bank-Türme, © Deutsche Bank

Sociocultural and Functional Quality



| 18 | Thermal comfort in the winter | Criteria |
|-----------|--|---------------------|
| 19 | Thermal comfort in the summer | groups: |
| 20 | Indoor air quality | 18-25: Health |
| 21 | Acoustic comfort | comfort, and |
| 22 | Visual comfort | user well- |
| 23 | User influence on building operation | beeing |
| 24 | Quality of outdoor spaces | 26-30: |
| 25 | Safety and security | Functionality |
| 26 | Handicapped accessibility | 04.00 |
| 27 | Efficient use of floor area | 31-32: Aesthetic |
| 28 | Suitability for conversion | quality |
| 29 | Public access | |
| 30 | Cycling convenience | |
| 31 | Design and urban planning quality trough competition | |
| 32 | Integration of public art | |

Sociocultural and Functional Quality



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Comfort criterias to evaluate the benefit of the building to the users.

Each criteria includes different indicators such as:

- Operating temperature
- Draughts
- Radiant temperature asymmetry
- Relative humidity

and:

- Availability of daylight in line of sight to the outside
- Lack of glare in daylight and artificial light
- Light distribution
- Color rendering

Sociocultural and Functional Quality



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Functional criteria addressing topics of efficiency and flexibility.

The suitability for conversion is analyzed on four levels:

- Modularity of the building
- Spatial structure
- Supply of electricity and other media
- Heating, supply and disposal of water

Technical Quality



| 33 | Fire prevention |
|----|-------------------------------------|
| 34 | Noise protection, emission controls |
| 35 | Building envelope quality |
| 40 | Ease of cleaning and maintenance |
| 42 | Ease of dismantling and recycling |



Technical Quality



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|----|-------------------------------------|--|
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| 35 | Building envelope quality | |
| | | |
| 40 | Ease of cleaning and maintenance | |

Requirements are:

- Median thermal transmittance coefficients of building components
- Thermal bridge adjustment
- Air permeability class (window airtightness)
- Amount of condensation within the structure
- Air exchange rate n₅₀ and if necessary q₅₀

Process Quality



| 43 | Comprehensive project definition | |
|----|--|--|
| 44 | Integrated planning | |
| 45 | Comprehensive building design | |
| 46 | Sustainable aspects in tender phase | |
| 47 | Documentation for facility management | |
| 48 | Environmental impact of construction site / construction process | |
| 49 | Prequalification of contractors | |
| 50 | Construction quality assurance | |
| 51 | Systematic commissioning | |

Criteria groups:

43-47: Quality of planning 48-51: Quality of construction



LVM 5_Kristall, © LVM Landwirtschaftlicher Versicherungsverein Münster a.G.

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This criterion is assessed by summing up the following two indicators:

- **Documentation** of materials, auxiliary materials, and safety data sheets
- **Measurements** for quality control (e.g. blower door test, thermography, footfall sound tests, indoor air quality measures)

Site Quality



| 56 | Site location risks | The criteria include topics such as: Avalanches, storm Outdoor air quality, outdoor noise |
|----|------------------------------------|---|
| 57 | Site location conditions | Soil and building plot Upkeep and condition of the neighborhood |
| 58 | Public image and social conditions | Accessibility of public transport systemsExistance of use-specific facilities |
| 59 | Access to transportation | The same of Tennenteed |
| 60 | Access to specific-use facilities | |
| 61 | Connections to utilities | |
| | | |

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Win-Win Situation for all stakeholders

- Reduced life-cycle costs
- Pay off in the long term: resource, energy and emission savings
- User satisfation: more comfort, healthier environment
- Competitive, public image advantages







Bernhard Weixelbraun Head of Department MEP - RE Austria

Raiffeisen evolution and DGNB; thoughts about sustainability



Nicolaus Helletzgruber Head of Sales & Marketing

Manfred Wachtler

Technical Director, Raiffeisen evolution Moscow

Advantages of DGNB certified building -'Leninskiy Prospekt 119

The Association of European Businesses



Official awarding for DGNB international Gold Status of the office center 'Leninskiy Prospekt 119'



The Association of European Businesses (AEB)

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