

Das Zertifizierungssystem LEED - Einführung & Überblick

Dipl.-Ing. (FH) Kay Killmann

GBCI[®] Europe

GGBA 
German Green Building Association

MARKET TRANSFORMATION

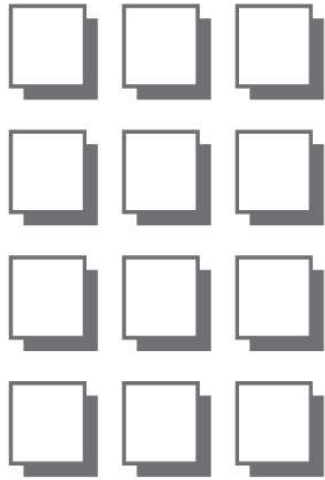


45min Webinar + 30min Q&A

Das LEED® Zertifizierungssystem

- Marktverbreitung
- LEED 101
 - Varianten & Aufbau
- Technischer Überblick BD+C v4





GREEN BUSINESS™ CERTIFICATION INC.

Kay Killmann
Head of Europe









LEED v4 in Europe



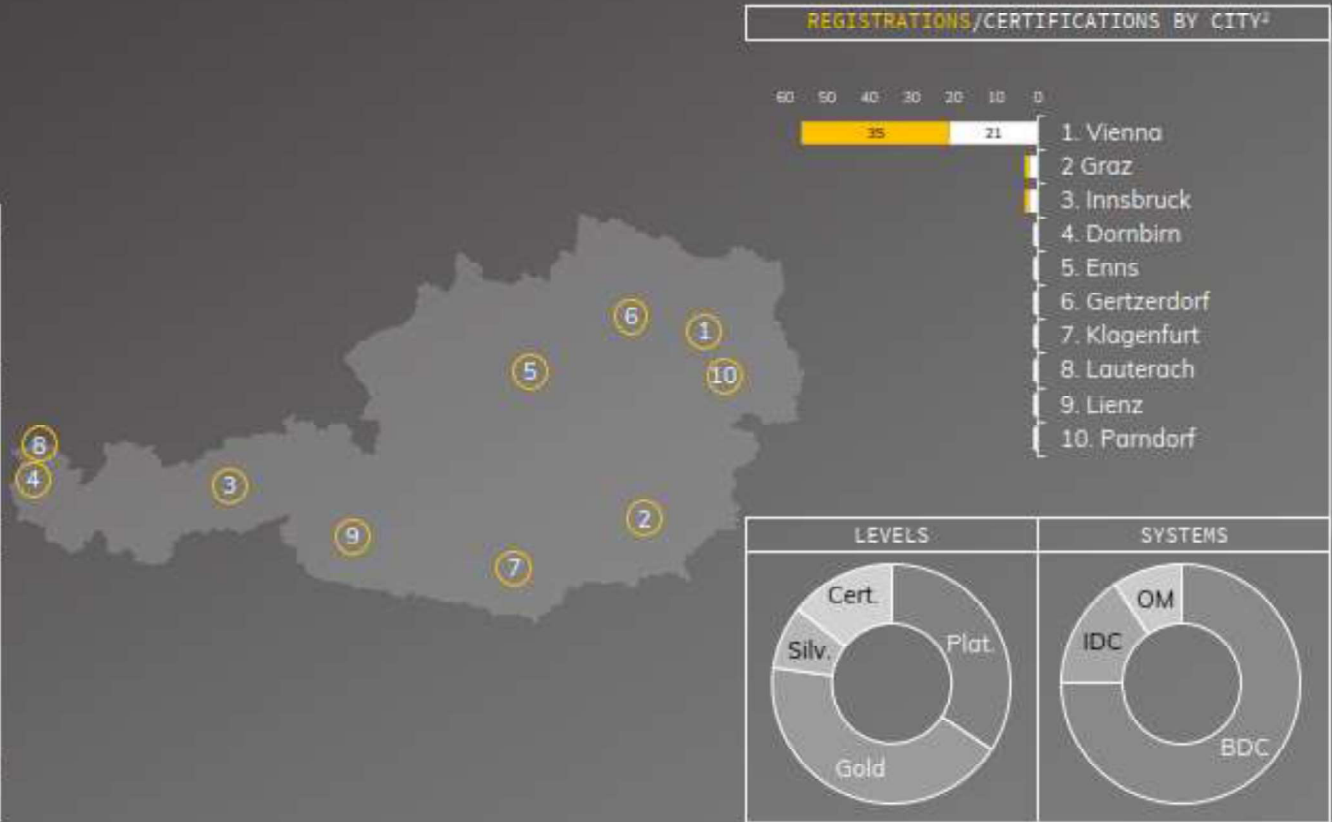
94,000+
Registered projects

54,000+
Certified projects



176

**COUNTRIES & TERRITORIES
AROUND THE WORLD**

#LEEDEurope AUSTRIA



#LEEDEurope AUSTRIA

TOP V4 PROJECT	NAME
	NIKE FACTORY STORE GRAZ
	SCORE
	51
TOP V3 PROJECT	NAME
	QUARTIER BELVEDERE CENTRAL
	SCORE
	89



TOP PROJECTS BY SPACE TYPE			
OFFICES			
B	Quartier Belvedere Central	Union Investment Real Estate	89
B	LifeCycle Tower One	Cree P1 GbmH	85
B	Green Worx	S+B Plan & Bau GmbH	84
B	Headquarter Schertler-Alge	J & R Schertler	84
O	Media Tower Wien	AIV GbmH & Co. / Generali Real Estate	83
DATACENTERS			
B	e-shelter Campus Vienna 1	e-shelter	81
RETAIL			
I	ZARA HAAS HAUS Vienna	Inditex	70
HIGHER EDUCATION			
B	PEMA 2	PEMA Gruppe	70
HEALTH CARE			
B	Rehaklinik Enns	Rehaklinik Enns GmbH	69





LEED® – Leadership in Energy and Environmental Design

- Internationales Zertifizierungssystem
 - Freiwillig - konsensbasiert - marktabhängig
-



GBCI – Green Business Certification Inc. (gegr. 2008) <http://www.gbci.org>

- Abwicklung von Zertifizierung und Weiterbildung (CE)
-



USGBC – U.S. Green Building Council (gegr. 1993) <http://www.usgbc.org>

- Non - profit Organisation
- Die nachhaltige Bauindustrie brauchte ein System, das grüne Gebäudestandards definiert und vergleichbar macht.

Definitionen



LEED vs. Leeds



11

Certified vs Accredited



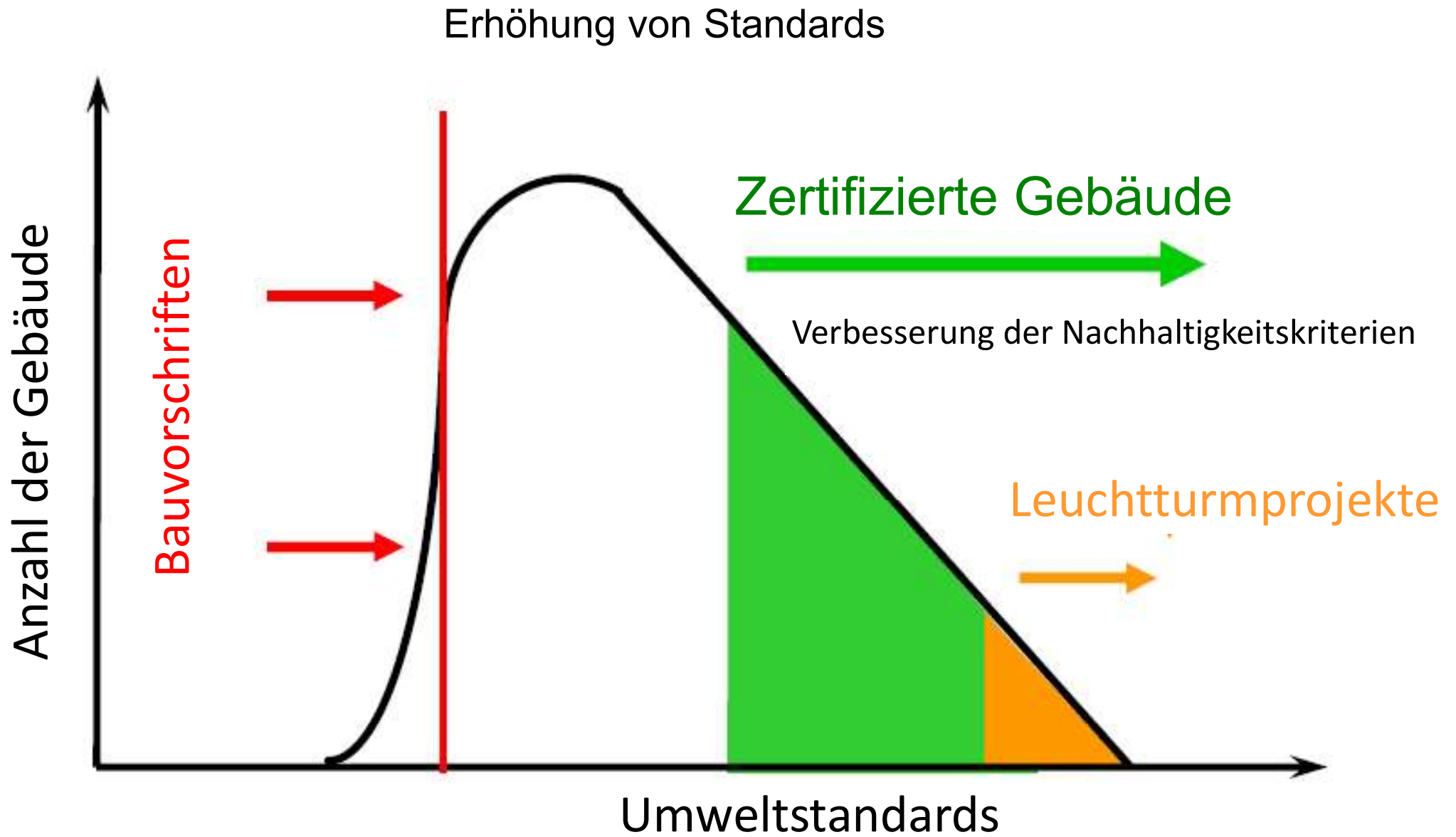
Credit

Credits vs. Punkte

5 Punkte



BUILDING
CERTIFICATION





LEED RATING SYSTEMS





40+
CERTIFIED



50+
SILVER



60+
GOLD



80+
PLATINUM

CREDIT CATEGORIES



Sustainable Sites (SS)
Nachhaltiger Standort



Integrative Process (IP)
Integrale Planung



Location & Linkage (LL)
Lage & Verkehr



Materials & Resources (MR)
Materialien & Rohstoffe



Water Efficiency (WE)
Wassereffizienz



Indoor Environmental Quality (IEQ)
Innenraumqualität







Energy & Atmosphere (EA)
Energie & Atmosphäre



Innovation & Design Process (ID)
Innovation & Entwurf

LEED for New Construction and Major Renovations (v4)

		POSSIBLE: 1
Credit	Integrative process	1
	LOCATION & TRANSPORTATION	POSSIBLE: 16
Credit	LEED for Neighborhood Development location	16
Credit	Sensitive land protection	1
Credit	High priority site	2
Credit	Surrounding density and diverse uses	5
Credit	Access to quality transit	5
Credit	Bicycle facilities	1
Credit	Reduced parking footprint	1
Credit	Green vehicles	1
	SUSTAINABLE SITES	POSSIBLE: 10
Prereq	Construction activity pollution prevention	REQUIRED
Credit	Site assessment	1
Credit	Site development - protect or restore habitat	2
Credit	Open space	1
Credit	Rainwater management	3
Credit	Heat Island reduction	2
Credit	Light pollution reduction	1
	WATER EFFICIENCY	POSSIBLE: 11
Prereq	Outdoor water use reduction	REQUIRED
Prereq	Indoor water use reduction	REQUIRED
Prereq	Building-level water metering	REQUIRED
Credit	Outdoor water use reduction	2
Credit	Indoor water use reduction	6
Credit	Cooling tower water use	2
Credit	Water metering	1
	ENERGY & ATMOSPHERE	POSSIBLE: 33
Prereq	Fundamental commissioning and verification	REQUIRED
Prereq	Minimum energy performance	REQUIRED
Prereq	Building-level energy metering	REQUIRED
Prereq	Fundamental refrigerant management	REQUIRED
Credit	Enhanced commissioning	6
Credit	Optimize energy performance	18
Credit	Advanced energy metering	1
Credit	Demand response	2
Credit	Renewable energy production	3
Credit	Enhanced refrigerant management	1
Credit	Green power and carbon offsets	2

	MATERIAL & RESOURCES	POSSIBLE: 13
Prereq	Storage and collection of recyclables	REQUIRED
Prereq	Construction and demolition waste management planning	REQUIRED
Credit	Building life-cycle impact reduction	5
Credit	Building product disclosure and optimization - environmental product declarations	2
Credit	Building product disclosure and optimization - sourcing of raw materials	2
Credit	Building product disclosure and optimization - material ingredients	2
Credit	Construction and demolition waste management	2

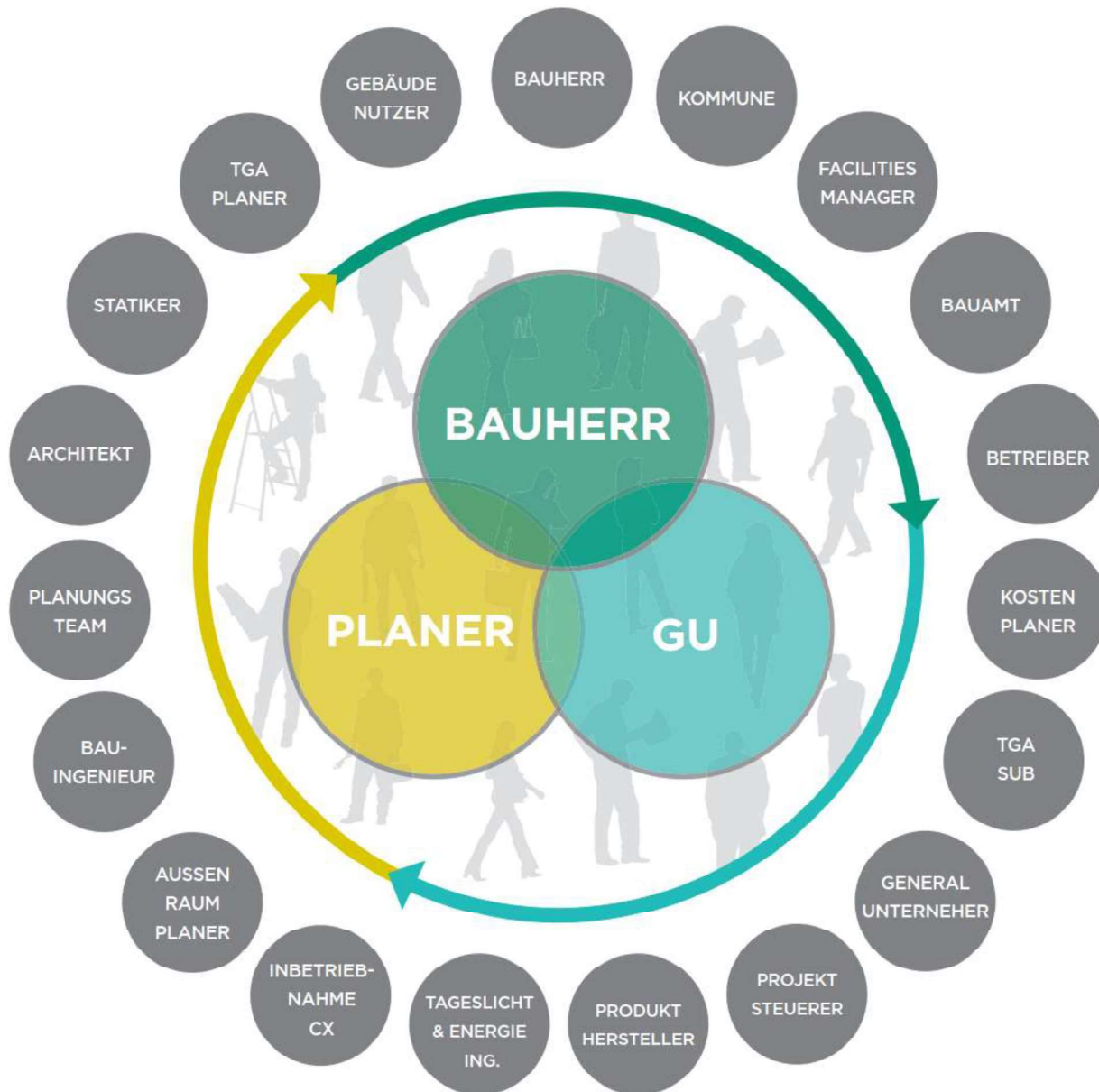
	INDOOR ENVIRONMENTAL QUALITY	POSSIBLE: 16
Prereq	Minimum IAQ performance	REQUIRED
Prereq	Environmental tobacco smoke control	REQUIRED
Credit	Enhanced IAQ strategies	2
Credit	Low-emitting materials	3
Credit	Construction IAQ management plan	1
Credit	IAQ assessment	2
Credit	Thermal comfort	1
Credit	Interior lighting	2
Credit	Daylight	3
Credit	Quality views	1
Credit	Acoustic performance	1

	INNOVATION	POSSIBLE: 6
Credit	Innovation	5
Credit	LEED Accredited Professional	1

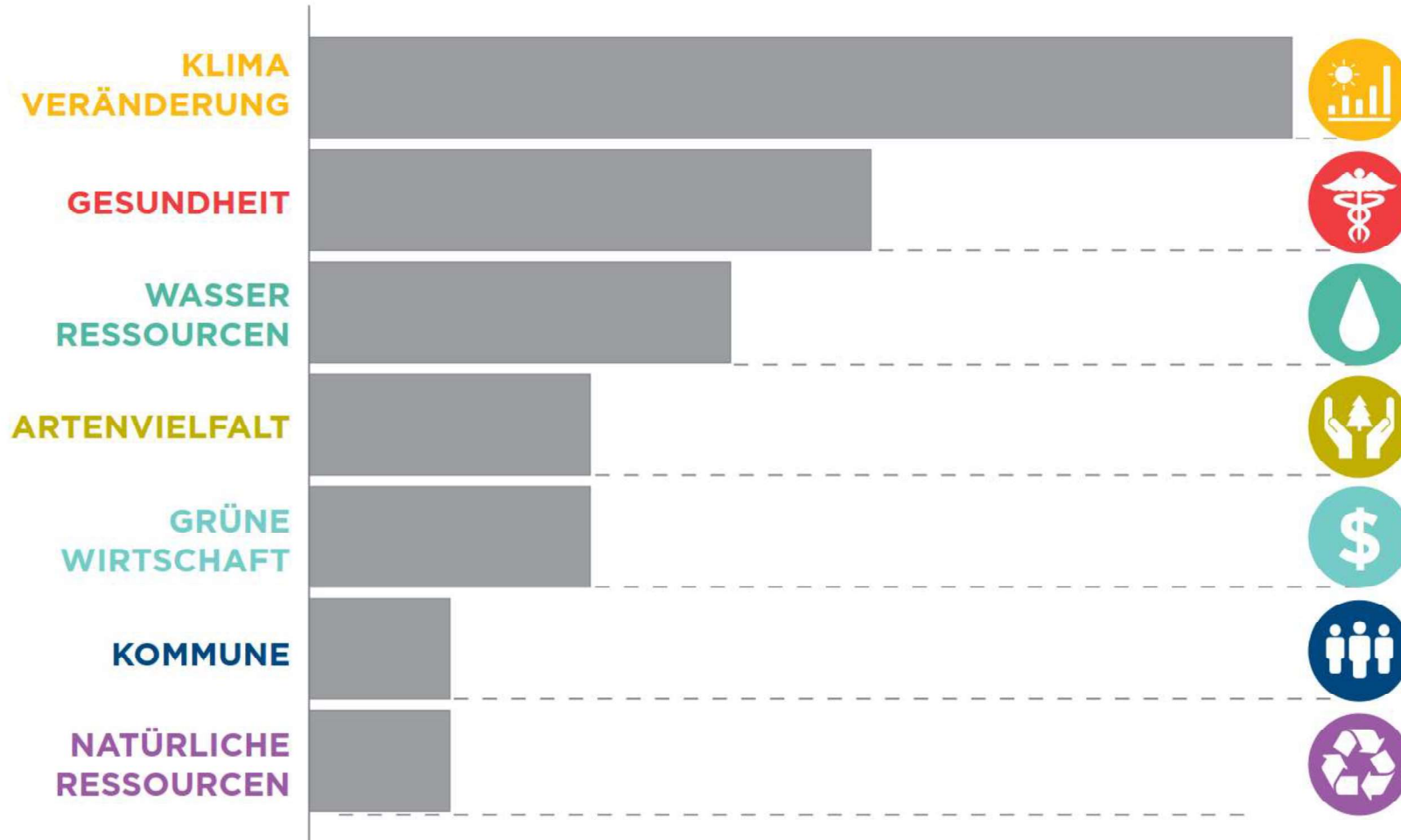
	REGIONAL PRIORITY	POSSIBLE: 4
Credit	Regional priority	4

TOTAL **110**

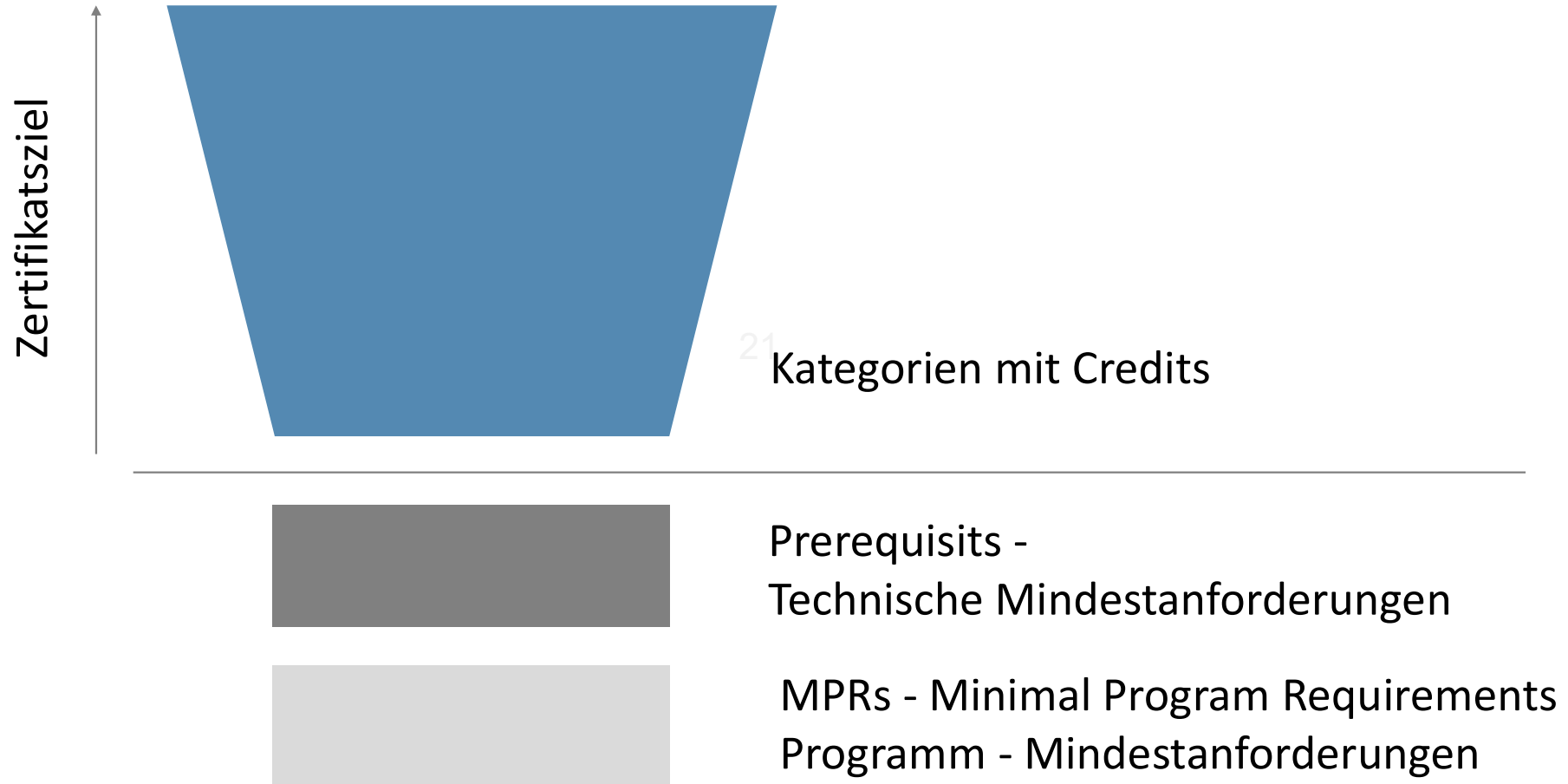




HÖCHSTER PUNKTEWERT = NACHHALTIGSTES ERGEBNIS



Systemstruktur



MPRs | Minimum Program Requirements

Allgemeine LEED Programm - Mindestanforderungen

1.

Mpr

Das Gebäude muss auf einem permanenten Standort auf bereits vorhandenem Land geplant, erbaut und betrieben werden.

2.

Mpr

Das Projekt muss eine nachvollziehbare und plausible LEED-Grenze nachweisen.

22

3.

Mpr

Die Bruttogrundfläche des Gebäudes muss folgende Mindestgröße aufweisen:

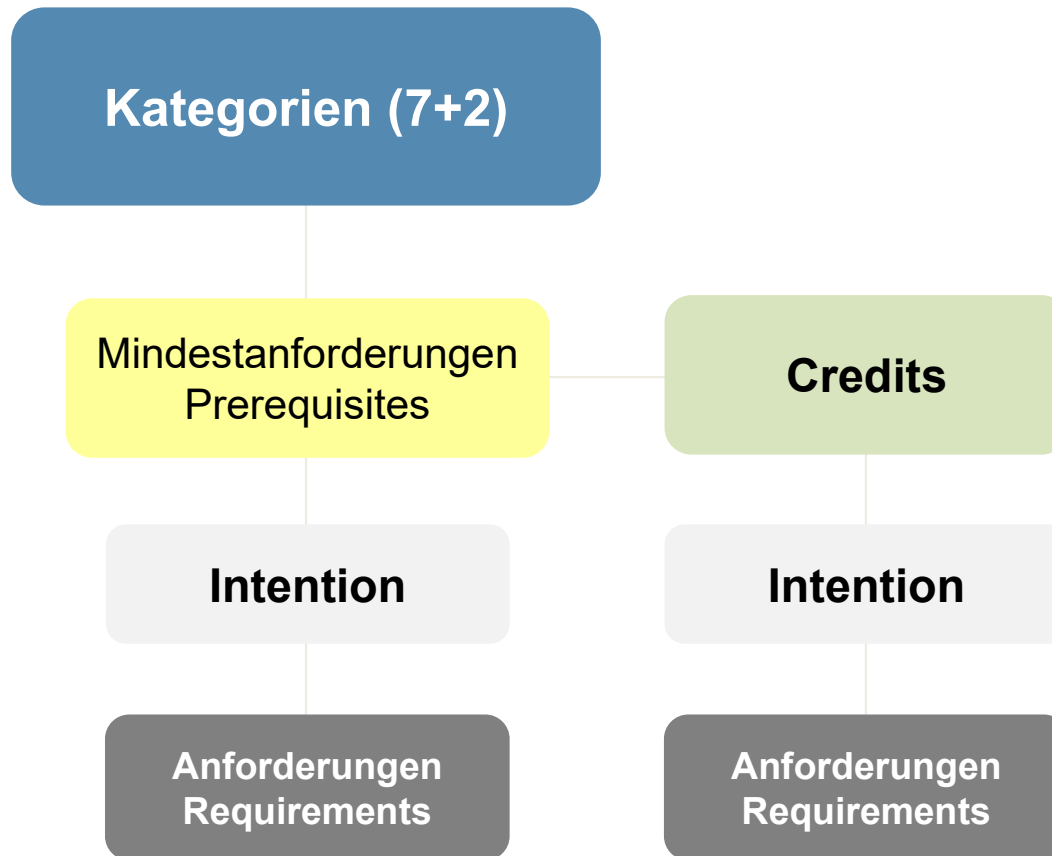
- BD+C und O+M: 93 m² / 1000 ft²
- ID+C: 22 m² / 250 ft²

O+M

Mpr

Das Gebäude muss mind. 12 Monate im Betrieb sein.

Die LEED System - technische Anatomie



- Credit Name und Punktwert
- Intention / Intent
- Anforderungen / Requirements
- Nutzen und mögliche Einschränkungen
- Einfluss auf andere Credits
- Standards & Normen
- Einbindung in Prozesse
- Bauablaufplan + Projektteam
- Berechnungen
- Dokumentationsanforderungen
- Beispiele
- Übererfüllung / Exemplary Performance
- Regionale Abweichungen
- Ressourcen
- Definitionen

LEED v4

BUILDING DESIGN + CONSTRUCTION | BD+C

Entwurf + Ausführung

NEUBAU



Prerequisites | Technische Mindestanforderungen



SS Sustainable Sites | Nachhaltiger Standort

Construction Activity Pollution Prevention | Vorsorgemaßnahmen gegen bauliche Umweltbelastungen



WE Water | Wasser

Outdoor water use reduction | Trinkwassereinsparung im Freien
Indoor water use reduction | Trinkwassereinsparung im Gebäude
Building-level water metering | Wasserhauptzähler



EA Energy | Energie

Fundamental commissioning and verification | Grundlegendes Inbetriebnahmemanagement und Verifizierung
Minimum energy performance | Mindestanforderungen an die Energieeffizienz
Building-level energy metering | Energiehauptzähler
Fundamental refrigerant management | Grundlegendes Kältemittelmanagement

Prerequisites | Technische Mindestanforderungen



MR Materials & Resources | Materialien & Rohstoffe

Storage and Collection of Recyclables | Lagerung und Sammlung von Wertstoffen

Construction and Demolition Waste Management Planning | Planung Abfallmanagement für Neu- und Rückbau



EQ Indoor environmental quality | Innenraumqualität und Komfort

Minimum IAQ Performance | Mindestanforderungen Innenraumluftqualität

Environmental Tobacco Smoke Control | Maßnahmen zum Nichtraucherschutz

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LEED für Standort zur Nachbarschaftsentwicklung LEED for Neighborhood Development Location	8-16
Sensibler Flächenschutz Sensitive Land Protection	1
Standort von hoher Priorität High-Priority Site	1-2
Bebauungsdichte und Dienstleistungseinrichtung Surrounding Density and Diverse Uses	1-5
Zugang zu qualitativem Verkehrsnetz Access to Quality Transit	1-5
Fahrradabstellplätze Bicycle Facilities	1
Reduzierte Parkfläche Reduced Parking Footprint	1
Umweltfreundliche Fahrzeuge Green Vehicles	1
	max. Points
	16

Sustainable Sites | SS | Nachhaltiger Standort



Prävention von Umweltverschmutzung durch Bauaktivität Construction Activity Pollution Prevention	Prereq
Standortbewertung Site Assessment	1
Standortentwicklung – Lebensraum schützen oder wiederherstellen Site Development – Protect and Restore Habitat	1-2
Offene Fläche Open Space	1
Regenwasser-Management Rainwater Management	2-3
Reduzierung von Hitzeinseln Heat Island Reduction	1-2
Reduzierung von Lichtverschmutzung Light Pollution Reduction	1
Design- und Baurichtlinien für Mieter Tenant Design and Construction Guidelines	nur CS
max. Points	10



Reduzierung des Wasserverbrauchs im Außenbereich Outdoor Water Use Reduction	Prereq
Reduzierung des Wasserverbrauchs im Innenbereich Indoor Water Use Reduction	Prereq
Wassermessung auf Gebäudeebene Building-Level Water Metering	Prereq
Reduzierung des Wasserverbrauchs im Außenbereich Outdoor Water Use Reduction	1-2
Reduzierung des Wasserverbrauchs im Innenbereich Indoor Water Use Reduction	1-6
Wasserverbrauch Kühlturm Cooling Tower Water Use	1-2
Wassermessung Water Metering	1
Total Possible Points	11



Grundsätzliche Inbetriebnahme und Prüfung - Fundamental commissioning and verification	Prereq
Mindestenergieleistung - Minimum energy performance	Prereq
Energiemessung auf Gebäudeebene - Building-level energy metering	Prereq
Grundsätzliches Kältemittel-Management - Fundamental refrigerant management	Prereq
Verbesserte Inbetriebnahme - Enhanced Commissioning	2-6
Energieleistung optimieren - Optimized energy performance	1- 18
Verbesserte Energiemessung - Advanced energy metering	1
Nachfragesteuerung - Demand response	1-2
Erzeugung regenerativer Energie - Renewable energy production	1-3
Verbessertes Kältemittel-Management - Enhanced refrigerant management	1
Ökostrom und Kohlenstoffausgleich - Green power and carbon offsets	1-2
	max. Points
	33



Lagerung und Sammlung von Wertstoffen Storage and Collection of Recyclables	Prereq
Planung des Bau- und Abrissabfall-Management Construction and Demolition Waste Management Planning	Prereq
Reduzierung der Lebensdauer-Auswirkung auf Gebäude Building Life-Cycle Impact Reduction	2-5
Offenlegung und Optimierung für Bauprodukt - Umweltzertifizierung von Produkten Building Product Disclosure and Optimization – Environmental Product Declarations	1-2
Offenlegung und Optimierung für Bauprodukt – Sourcing von Rohmaterialien Building Product Disclosure and Optimization – Sourcing of Raw Materials	1-2
Offenlegung und Optimierung für Bauprodukt - Materialbestandteile Building Product Disclosure and Optimization – Material Ingredients	1-2
Bau- und Abrissabfall-Management Construction and Demolition Waste Management	1-2
max. Punkte	13

Indoor Environmental Quality | IEQ | Innenraumqualität



Mindestleistung Luftqualität im Innenbereich Minimum IAQ Performance	Prereq
Kontrolle des Tabakrauchs in der Umgebungsluft Environmental Tobacco Smoke Control	Prereq
Strategien zur verbesserten Luftqualität im Innenraum Enhanced IAQ Strategies	2
Emissionsarme Materialien Low-Emitting Materials	3
Plan für das Luftqualitätsmanagement im Innenbereich, Bau Construction Indoor Air Quality Management Plan	1
Bewertung der Luftqualität im Innenbereich Indoor Air Quality Assessment	1-2
Wärmekomfort Thermal Comfort	1
Innenbeleuchtung Interior Lighting	1-2
Tageslicht Daylight	1-3
Qualitative Aussicht Quality Views	1
Akustische Leistung Acoustic Performance	1
max. Points	16

ACP DOCUMENTATION GUIDANCE FOR PROJECTS OUTSIDE THE U.S.



Alternative Nachweisführung

Alternative Compliance Path | ACP

- LEEDv4 ist ein internationales System
- Anerkennung von **Nicht - U.S. Standards**
- Integration von Regional Priority Credits

Alternative Compliance Path



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NO USGBC ACCOUNT?

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Evolution of LEED



LEED v1.0-2.2
1998-2009
Strategy based

LEED 2009
2009-present
Analytically weighted

LEED v4
Nov. 2013
Outcome oriented

LEED v4.1

Powered by Arc

**The first green building performance
standard in the world**

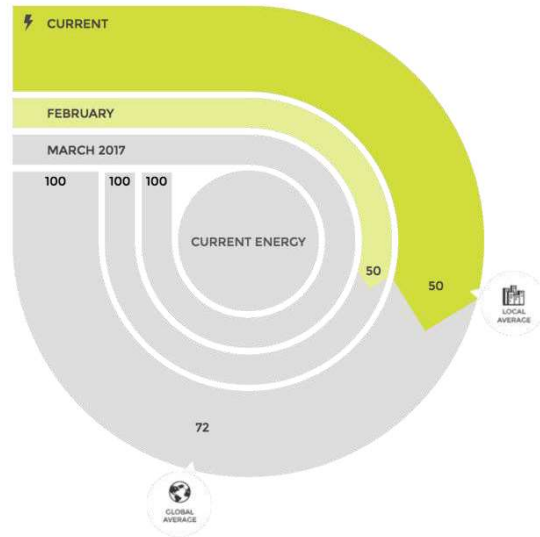
Arc

A Platform for
Performance-Based
Green Building

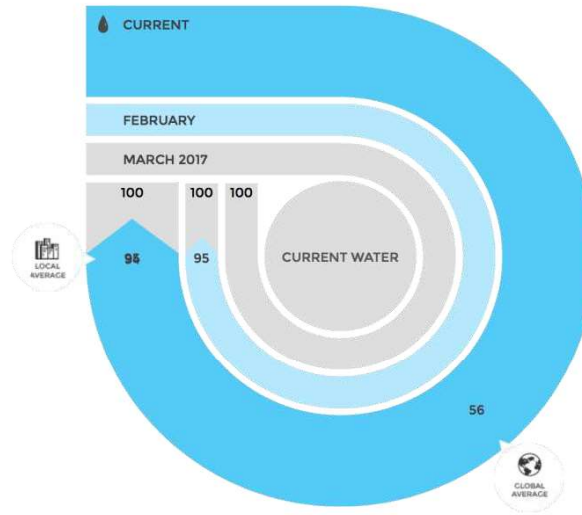


Portfolio Management | CO₂ Reporting | Cities & Communities

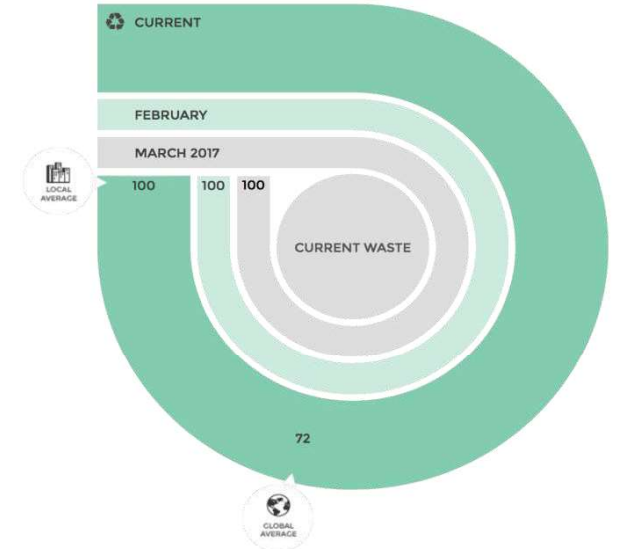
Energy



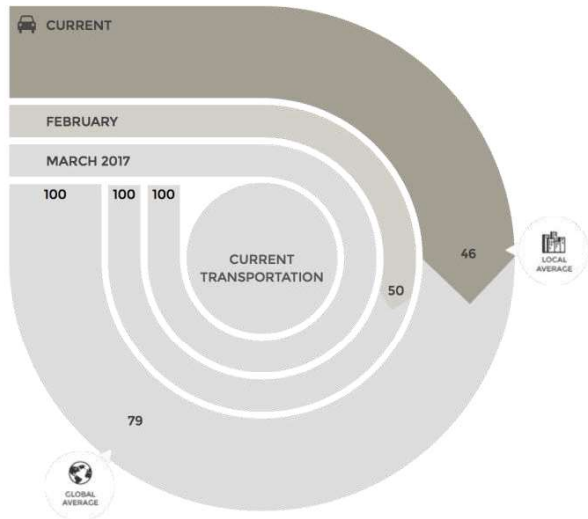
Water



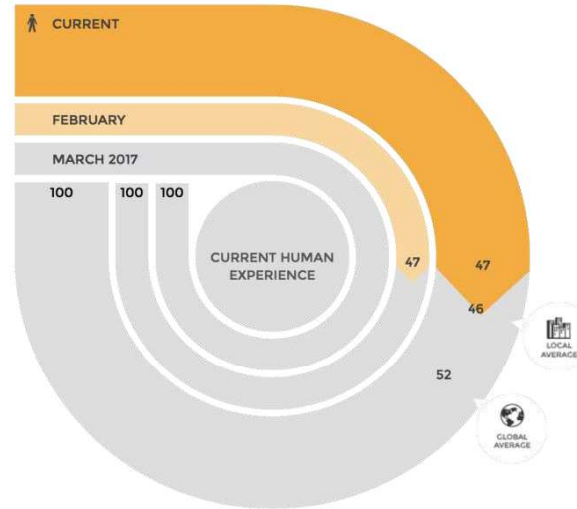
Waste



Transport



Human Experience



Performance Score 1-100

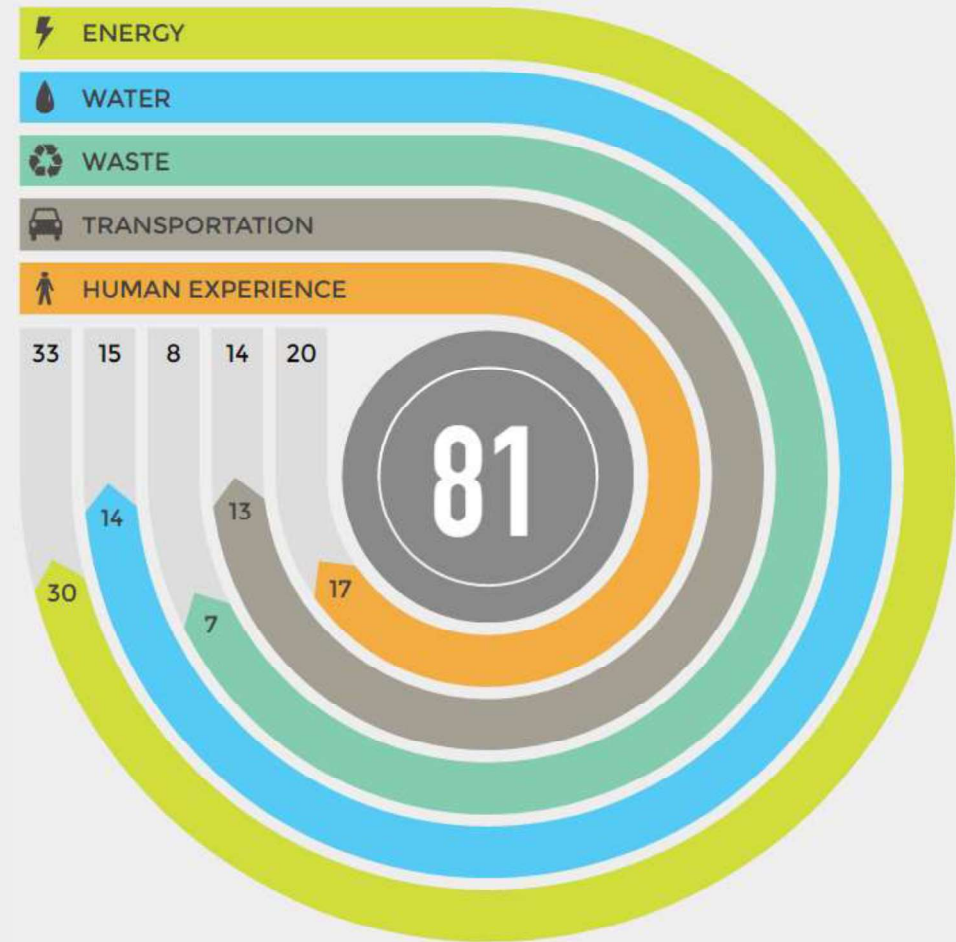


The building provides data across 5 categories to generate score:

- Energy
- Water
- Waste
- Transportation
- Human Experience

SCORING 1-100

MANAGE | IDENTIFY | COMPARE



COMMUNICATE



LEED[®] Zero

PEOPLE



An aerial night photograph of a city, likely Zurich, Switzerland, viewed from a high vantage point. The city is illuminated by streetlights and building lights, creating a warm glow against the dark night. The city is situated on a peninsula or near a large body of water, which is also lit up. In the background, there are snow-capped mountains under a dark, cloudy sky. The overall scene is a mix of urban lights and natural beauty.

BEYOND BUILDINGS.

An aerial photograph of a city street grid with various buildings and green spaces. A semi-transparent white rectangular box is centered over the image, containing the text 'LEED for Cities' in a bold, black, sans-serif font.

LEED for Cities



GREENBUILD®

INTERNATIONAL CONFERENCE & EXPO

Greenbuild Europe

Dublin, Ireland
March 24 – 25, 2019

Greenbuild

Atlanta, Georgia
November 19 – 22, 2019

Greenbuild Mexico

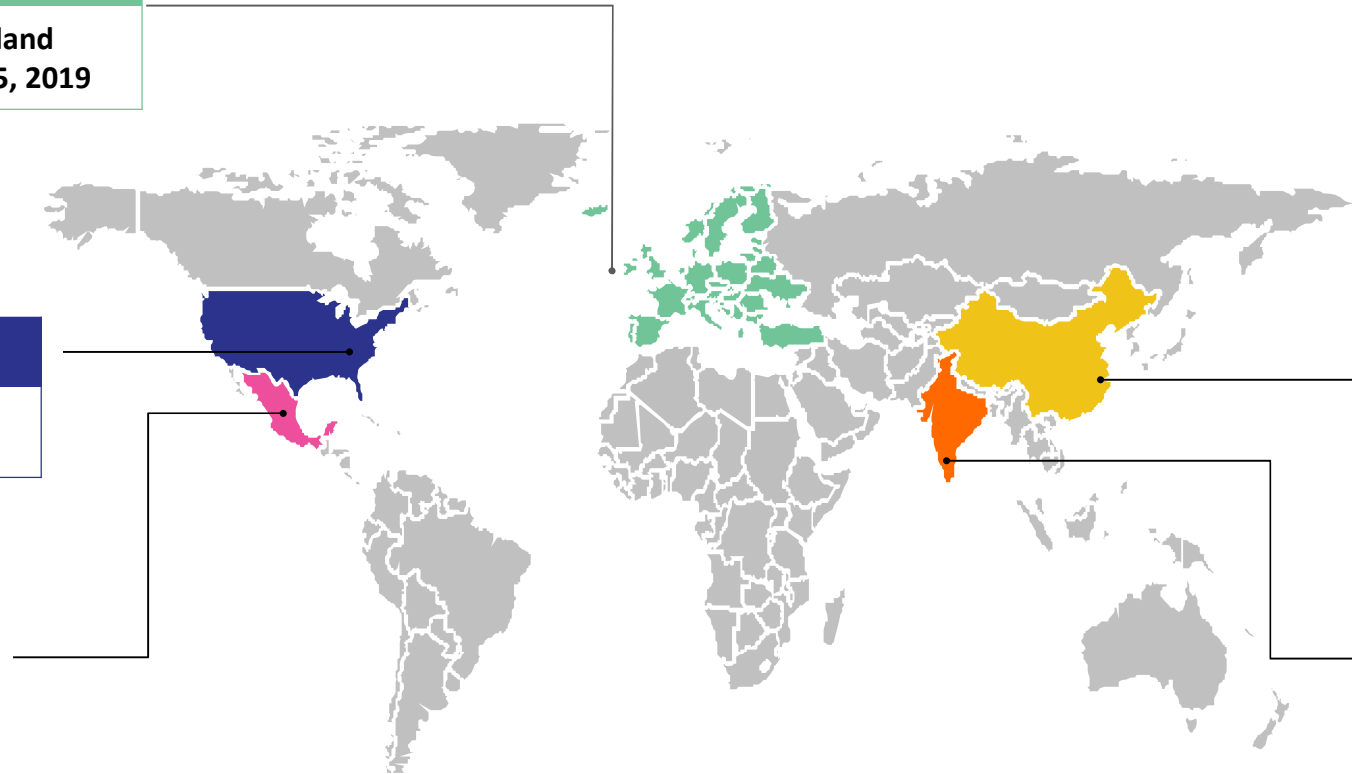
TBD

Greenbuild China

Shanghai, China
October 23 – 24, 2019

Greenbuild India

Bengaluru, India
February 6 – 7, 2020





BETTER BUILDINGS, BETTER LIVES

GBCI[®]

[in /COMPANY/GBCIEUROPE](#) [🐦 /GBCIEUROPE](#)

GBCI Europe | Munich | Germany

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