

# Achieving LEED® certification with SCHELL Products for high water efficiency



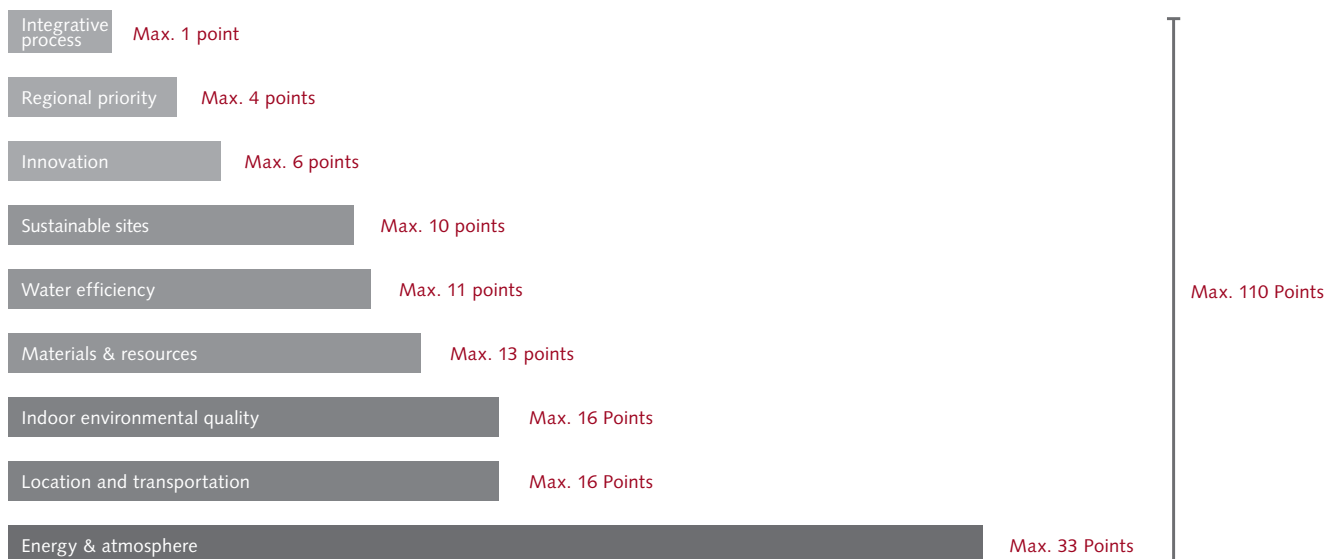
# LEED®

## Sustainability certification

The LEED® (Leadership in Energy and Environmental Design) Green Building Rating System™ is a voluntary, evolving, consensus-based international standard for developing high-performance, sustainable buildings, using a comprehensive, point-based system. The LEED® certification programme is initiated by USGBC® (US Green Building Council) and is internationally recognized.

The certification confirms that a building is designed and built to achieve a performance that surpasses national standards for energy savings, water efficiency, CO<sub>2</sub> emissions reduction, indoor environmental quality, stewardship of resources and environmental impacts.

These topics are specified in nine categories, subdivided into a range of issues, which are used to assess the building. LEED® points are awarded per credit on a 110-point scale, resulting in four levels of performance – Certified, Silver, Gold and Platinum.



# SCHELL

## Mentor in sustainability

---

Ultimately, sustainability is a key challenge for today's and future generations. Independent investigations have discovered that approx. 80% of the total life-cycle costs for a building are spent on operation and maintenance. This is where investments in water- and energy-efficient fittings quickly pay off. Maintenance and servicing costs also play a decisive role.

SCHELL enjoys a leading role as the pioneer in sustainable fittings. It is possible, for example, to save up to 60% of water, just by using our products. SCHELL products are also of superb quality, which forms the basis for all sustainable processes – from installation to operation and subsequent recycling. Products that need replacing after a short space of time are bad for the environment. SCHELL products are therefore particularly long-lasting, vandalism-proof and designed to be simple to maintain and straightforward to repair.

Hygiene also plays a role in sustainability, particularly in public sanitary rooms. Although the LEED® system only has one point for hygiene, SCHELL focuses in particular on hygiene, providing many intelligent solutions. This include contact-free washbasins, WCs and urinal fittings.

Using SCHELL products in combination with other building components, you can get up to 13 credits for the following issues (according to LEED®):

Category	Issue	Max. points
Water Efficiency (WE)	Prerequisite Indoor Water Use Reduction	–
	Prerequisite Building-Level Water Metering	–
	Credit Indoor Water Use Reduction	6
	Credit Water Metering	1
Energy & Atmosphere (EA)	Prerequisite Fundamental Commissioning and Verification	–
	Credit Enhanced Commissioning	6
Materials & Resources (MR)	Prerequisite Construction and Demolition Waste Management Planning	–
	Credit Building Life-Cycle Impact Reduction	5
	Credit Building Product Disclosure and Optimization –Sourcing of Raw Materials	2
	Credit Construction and Demolition Waste Management	2

# Products in scope\*

## Fittings

---

Be it fittings for hand washbasin, shower, kitchen, WC or urinal. Whether regulating angle valves, domestic appliance connection fittings or heating installation fittings. Today, SCHELL supplies more than 2000 expert solutions to the increased demands for our customers globally, covering hygiene, saving water, reliability and robustness. Many of them supporting LEED® certification of your building.

### Wash basin taps/kitchen taps



XERIS



CELIS



PURIS



MODUS



MODUS EH



MODUS Care



PETIT



GRANDIS

### Concealed shower taps



LINUS



LINUS Basic

### Concealed wash basin taps



PETIT



VITUS



LINUS



WALIS

### Exposed shower fittings/shower panels



VITUS  
VD-EH-M



VITUS  
VD-T



MODUS  
MD-T



LINUS



LINUS Inox

\*Assessment focused on the listed products. Other SCHELL products with identical technical design achieve identical ratings.

**Exposed WC flush valves  
Exposed urinal flush valves**



SCHELLOMAT  
flush valve



SCHELLOMAT  
Basic



SCHELLTRONIC

**Concealed WC flush valves  
Concealed urinal flush valves**



EDITION



EDITION Eco



EDITION E

**Cistern mounting modules**



MONTUS  
C 120



MONTUS  
820 C

**Concealed flushing cistern modules**



C-N 120



C 120 n

## Products in scope

### The SWS water management system

---

For today's operators, investors, sanitary equipment installers, planners and facility managers, the efficient and safe handling of drinking water is a top priority particularly in ecological buildings. And this is no easy task, especially for larger properties, whether new buildings or part of an existing portfolio. How can I ensure that the drinking water system is operated hygienically in the long term? And how can I manage fittings and maintenance work productively and economically? Are there management systems that work with my building automation system?

SHELL has an innovative answer to all these questions: the SWS water management system – one of the first water management systems to offer intelligent wired/wireless networking and control for fittings – especially in public sanitary facilities.

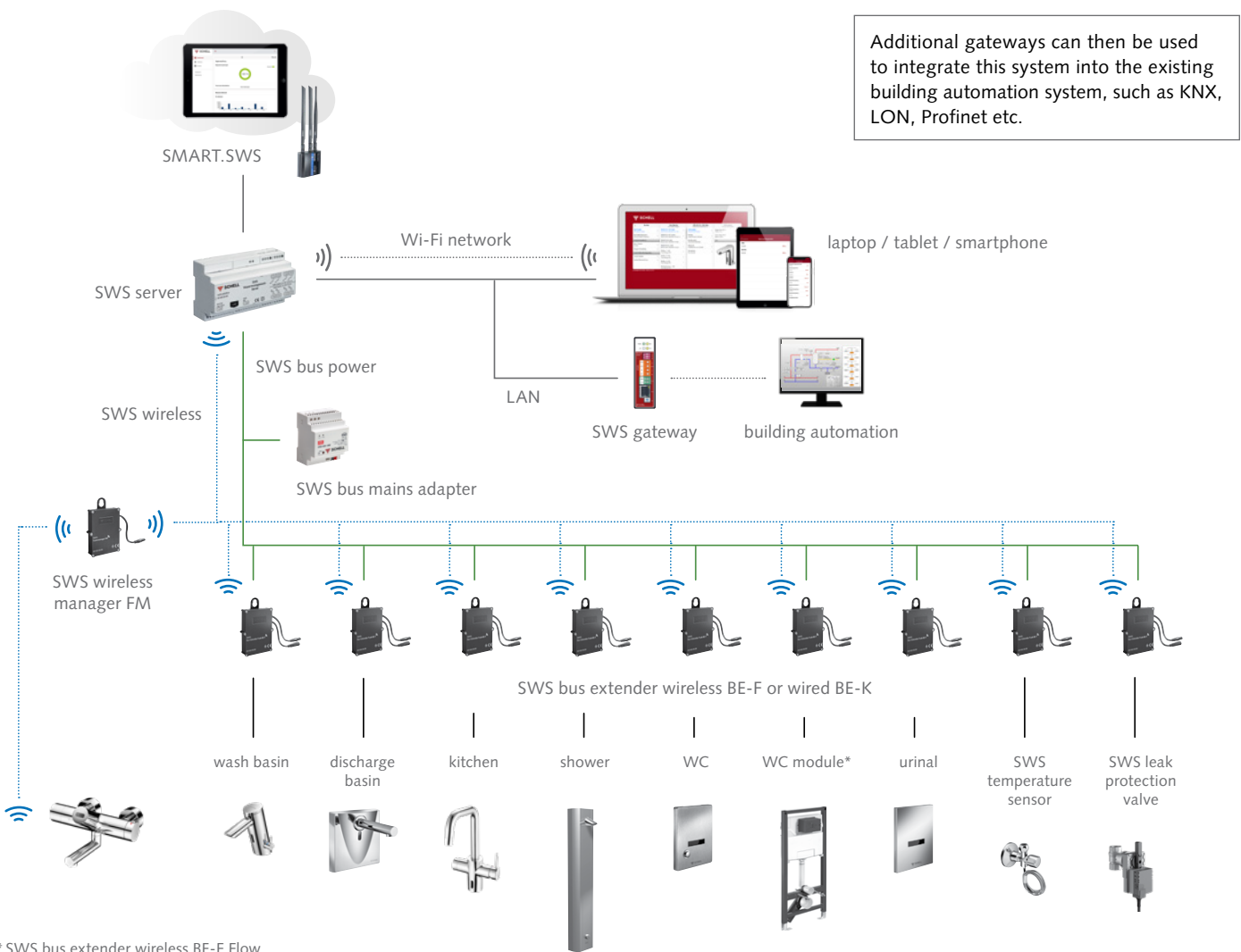
#### **The advantages**

- Safe: First-class drinking water hygiene right up to the point of use with automated hygiene flushes
- Efficient: Optimised energy consumption and costs achieved by targeted control of water quantities and integration into the building automation system
- User-friendly: Operated via an intuitive, browser-based app available for popular PC, tablet and phone platforms
- Versatile: Can be used for analysis, end-to-end documentation, setting up groups, and much more
- Intelligent: Centralised control of fitting parameters via the water management server
- Practical: The system has a small number of components to avoid mistakes with orders and to help ensure rapid installation

# The SWS water management system

## The components

SWS allows you to network, control and monitor the associated SCHELL fittings via a centralised water management server and an intelligent software package specifically developed to operate the solution. The system works on the principle of 'lots of features from a small number of components'. Installations can be networked on a wired or wireless network with the corresponding bus extenders. Up to 64 subscribers can be networked by each server.



Additional gateways can then be used to integrate this system into the existing building automation system, such as KNX, LON, Profinet etc.

\* SWS bus extender wireless BE-F Flow or wired BE-K Flow

## WE – Indoor water use reduction

6 points



American High School and Elementary School, Stuttgart-Boeblingen

### Aim

To reduce indoor water consumption

### Parameters

*The fixtures and fittings:*

- Reduce aggregate water consumption by 20% from the baseline
- Are WaterSense labelled (or a local equivalent outside the U.S.)
- Additional potable water savings can be achieved using alternative water sources
- Further reduce water use from the calculated baseline: Basin, Shower, WC, Urinal

### Note

Indoor water use reduction: 6 points (A)

### In detail

The SCHELL systems are designed to minimize the waste of water. Manually controlled products are less favourable than electrically controlled products. The lowest WC flush volumes cannot be achieved by manual systems (values taken from LEED® brochure). The score is therefore lower.

SCHELL products in scope (manual)	points	Product suitability	Comments
Wash basin taps	2	+++	A
Concealed wash basin taps	2	+++	A
Exposed shower fittings & shower panels	3	+++	A
Concealed shower taps	3	+++	A
Exposed WC flush valves	2	+++	A
Concealed WC flush valves	2	+++	A
Exposed urinal flush valves	6	+++	A
Concealed urinal flush valves	6	+++	A
Cistern mounting modules & cover plates	2	+++	A
SWS water management system	–	–	–



American High School and Middle School, Spangdahlem

The SCHELL systems are designed to minimize the waste of water. It is possible to save up to 60% water by implementing electronic instead of manual products. The values vary depending on public/private use and electronic or manual control (values taken from LEED® brochure). It is important to note that these are individual values and not the total value for the building.

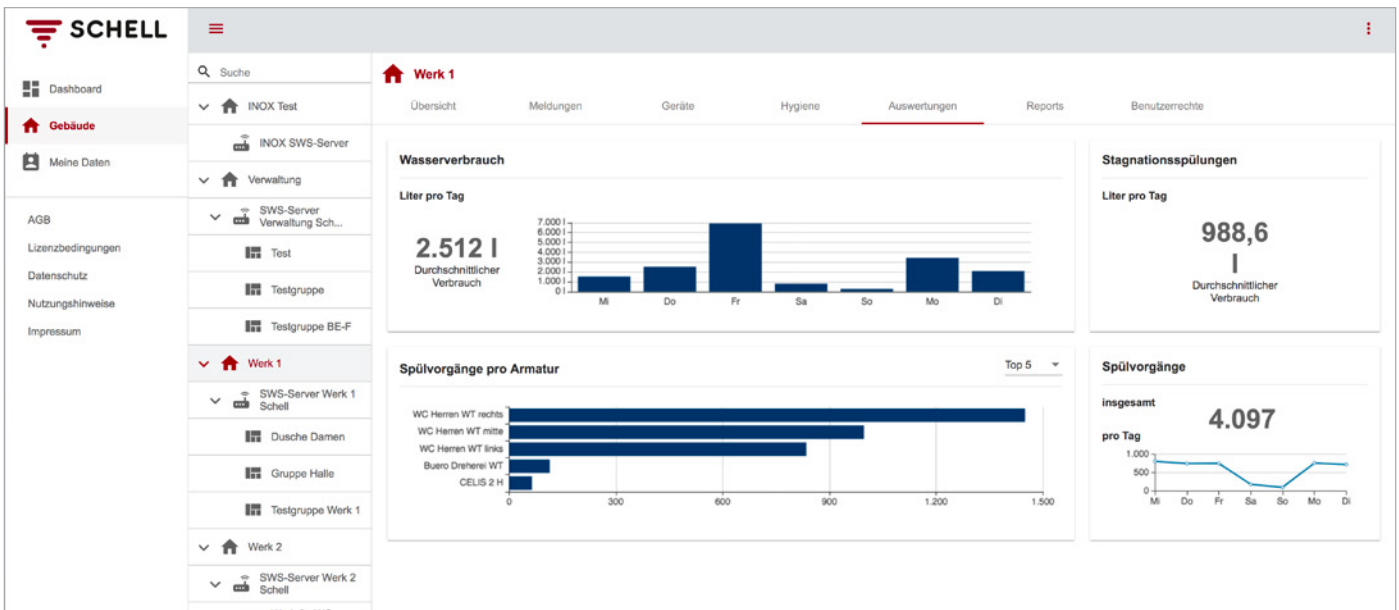
SCHELL products in scope (electronic)	points	Product suitability	Comments
Wash basin taps	2	+++	A
Concealed wash basin taps	2	+++	A
Exposed shower fittings & shower panels	3	+++	A
Concealed shower taps	3	+++	A
Exposed WC flush valves	4	+++	A
Concealed WC flush valves	4	+++	A
Exposed urinal flush valves	6	+++	A
Concealed urinal flush valves	6	+++	A
Cistern mounting modules & cover plates	2	+++	A
SWS water management system	N/A	-	-

These values are more representative of the total impact at the building level. Toilets and urinals have the largest impact followed by showers and taps. (Calculations made using the LEED® water use calculator)

SCHELL products in scope (electronic)	points	Product suitability	Comments
Fittings	3	+++	A
SWS water management system	N/A	+++	A

# WE – Building-level water metering

## 1 point



SMART.SWS reporting: water consumption (calculated)

### Aim

To support water management and identify opportunities for additional water savings by tracking water consumption

### Parameters

- Install permanent water meters that measure the total potable water use for the building and associated grounds
- Meter data summarized in monthly and annual records
- Meter readings can be manual or automated
- Share the whole-project water usage data for a five-year period with USGBC
- Install permanent water meters for two or more of the following water subsystems: 80% of the indoor fixtures and fitting

### Note

Water metering: 1 point (A)

### In detail

It is possible to install sub-meters without SCHELL, so no points can be credited. However, SCHELL also has its own water management system that provides further control over the electronically-controlled products (preventing stagnating water and providing thermal disinfection).

SCHELL products in scope (manual and electronic)	points	Product suitability	Comments
Fittings	N/A	+++	A
SWS water management system	1	+++	A

# EA – Fundamental Commissioning and Verification/Enhanced Commissioning

## 6 points



Coca Cola Headquarters, Madrid

### Aim

To support the design, construction, and eventual operation of a project that meets the owner's project requirements for energy, water, indoor environmental quality, and durability

### Parameters

*Commissioning Process Scope:*

- ASHRAE Guideline 0-2005 and Guideline 1.1–2007
- Exterior Enclosures: inclusion in the owner's project requirements and basis of design
- Engage a commissioning authority
- Current Facilities Requirements and Operations and Maintenance Plan

*Option: Enhanced systems commissioning*

- Path 1. Enhanced commissioning
- Complete the commissioning process activities for mechanical, electrical, plumbing and assemblies
- Path 2. Enhanced and Monitoring-Based Commissioning
- Achieve path 1
- Develop monitoring-based procedures and assess performance of energy- and water-consuming systems

### Note

Enhanced commissioning: 3 points (A)  
Enhanced commissioning and monitoring: 4 points (B)

### In detail

A commissioning authority must be included to control the commissioning of the sanitary systems. Other systems such as HVAC should be checked as well. The complex building services such as the BMS should be tested and can be used to monitor energy- and water-consuming systems.

SCHELL products in scope (manual and electronic)	points	Product suitability	Comments
Fittings	3	+++	A
SWS water management system	4	+++	B

# MR – Building Life-Cycle Impact Reduction

5 points



Merck Innovation Center, Darmstadt

## Aim

To encourage adaptive reuse and to optimize the environmental performance of products and materials

## Parameters

- Demonstrate reduced environmental impact by reusing existing building resources or demonstrating a reduction in materials use via LCA: 4 options

*Option 4: Whole-building life-cycle assessment:*

- Conduct an LCA of the project's structure and enclosure that demonstrates a minimum of 10% reduction, compared with a baseline building, in at least three of the six impact categories:
- Global warming potential, depletion of ozone layer, acidification, eutrophication, formation of ozone, depletion of non-renewable energy resources

## Note

Option 4: Life cycle assessment: 3 points (A)

## In detail

The LCA study should include as many building materials as possible to be more accurate. Higher amounts of recycled materials and the energy-efficient and durable production of the materials decreases the life cycle impacts. Focus should be on the reduction of impacts during usage, which is the highest factor in the LCA. Manually controlled systems have a slightly better LCA score because they contain fewer materials.

SCHELL products in scope (manual and electronic)	points	Product suitability	Comments
Fittings	1	+++	A
SWS water management system	1	+++	A

## Waste reduction

All of the brass turnings and swarf generated during production at SCHELL are collected and returned to the brass manufacturer. Recycling also consumes less energy and produces less CO<sub>2</sub> than the original brass production process.

# MR – Sourcing of Raw Materials

2 points



Torre Rioja, Madrid

### Aim

To encourage the use of products and materials for which life cycle information is available and that have environmentally, economically, and socially preferable life cycle impacts

To reward project teams for selecting products verified to have been extracted or sourced in a responsible manner

### Parameters

*Option 1: Raw material source and extraction reporting*

*Option 2: Leadership extraction practices*

- Meet one of criteria below for at least 25% by cost of the total value of building products: Materials reuse, recycled content
- Products sourced (extracted, manufactured, and purchased) within 100 miles (160 km) of the project site are valued at 200% of their base contributing cost.

*Recycled content:*

- Use materials with recycled content
- Assessment only for permanently installed materials & furniture
- Material manufacturing study required

### Note

Leadership extraction practices: 1 point (A)

### In detail

Corporate sustainability reports (GRI, OECD, ISO 26000) are needed to prove the environmental impacts of raw material source, extraction and manufacturing operations (the product's supply chain). SCHELL seeks to offer products that have high recyclability (metals such as copper alloys), including by offering return of goods.

SCHELL products in scope (manual and electronic)	points	Product suitability	Comments
Fittings	1	+++	A
SWS water management system	1	+++	A

# MR – Construction and Demolition Waste Management

2 points



Pegaso City, Madrid

### Aim

To reduce construction and demolition waste disposed of in landfill and incineration facilities by recovering, reusing, and recycling materials

### Parameters

- Recycle and/or salvage non-hazardous construction and demolition materials
- Option 1 – Diversion of total construction and demolition material (weight or volume)
  - Divert 50% and Three Material Streams
  - Divert 75% and Four Material Streams
- OR
- Option 2: Reduction of total waste material

### Note

Diversion of material: 2 points (A)

### In detail

The materials and packaging can be recycled and avoid being dumped in landfill. SCHELL also promotes the return of goods to increase the reusability and circularity of the materials.

SCHELL products in scope (manual and electronic)	points	Product suitability	Comments
Fittings	2	+++	A
SWS water management system	2	+++	A

# Results of product analysis

## Complete overview



American High School, Kaiserslautern

### Rating

Platinum ≥ 80

Gold 60–70

Silver 50–59

Certified 40–49

### LEED® points total

SCHELL products in scope	Manual		Electronic	
	Total	Sanitary*	Total	Sanitary*
Wash basin taps	9	17	9	17
Concealed wash basin taps	9	17	9	17
Exposed shower fittings & shower panels	10	17	10	17
Concealed shower taps	10	17	10	17
Exposed WC flush valves	9	17	11	17
Concealed WC flush valves	9	17	11	17
Exposed urinal flush valves	13	17	13	17
Concealed urinal flush valves	13	17	13	17
Cistern mounting modules & cover plates	9	17	9	17
SWS water management system	9	13	9	13

### Summary

Sanitary systems make up a substantial part of the sustainability of a building. These systems require materials and produce waste during construction. They also need correct installation and maintenance, produce noise and use water. SCHELL strives towards the best results for its fittings and management systems. This is reflected in how the systems contribute to a range of credits in LEED®.

### LEED® points in each category (see also p. 4/5)

SCHELL products in scope	WE Manual	WE Electronic	EA	MR
Wash basin taps	2	2	3	4
Concealed wash basin taps	2	2	3	4
Exposed shower fittings & shower panels	3	3	3	4
Concealed shower taps	3	3	3	4
Exposed WC flush valves	2	4	3	4
Concealed WC flush valves	2	4	3	4
Exposed urinal flush valves	6	6	3	4
Concealed urinal flush valves	6	6	3	4
Cistern mounting modules & cover plates	2	2	3	4
SWS water management system	1	1	4	4

\* Extra sanitary credits included (Building Product Disclosure and Optimization – EPD, Sourcing raw materials, Material ingredients)

## Manufacturer-neutral assessment by Encon

### External product analysis from the sustainability specialist

---

SCHELL had the in-depth product analyses necessary for credits to be assigned within the LEED® system carried out by Encon, the sustainability specialist. The analysis was therefore independent and neutral.

#### Successful collaboration

Encon is an accredited sustainability expert and assessor. Thanks to its extensive knowledge of sustainability certification for buildings, the company is always up-to-date with the latest developments in the property sector. That is why Encon has outstanding LEED® expertise and is the perfect partner for SCHELL in this area. The information in this brochure is based on the product analyses on SCHELL fittings conducted externally by Encon. The analyses therefore allow planners and specialist trades to carry out a manufacturer-independent assessment of SCHELL products under the LEED® ecological building certification.



# SCHELL fittings at a glance

## Sustainable SCHELL products for your buildings

**Wash basin tap for public use: max. 1.32 l/min**



With flow regulator LEED®  
28 926 00 99 (XERIS E²)  
or 28 927 00 99  
(PURIS E², CELIS E², MODUS E):  
2 points

Points for flow volume

1	1.43 l/min
2	1.33 l/min
3	1.24 l/min
4	1.14 l/min
5	1.05 l/min
6	0.95 l/min

**Wash basin tap for private use: max. 1.32 l/min**



With flow regulator LEED®  
28 926 00 99 (XERIS E²)  
or 28 927 00 99  
(PURIS E², CELIS E², MODUS E):  
6 points

Points for flow volume

1	6.23 l/min
2	5.81 l/min
3	5.40 l/min
4	4.98 l/min
5	4.57 l/min
6	4.15 l/min

**Shower head: max. 6 l/min**



With flow restrictor LEED®  
63 014 00 99  
(COMFORT shower head):  
3 points

Points for flow volume

1	7.13 l/min
2	6.65 l/min
3	6.18 l/min

**WC flushing cistern 120 mm: max. 4 litres**



WC flushing cistern (120 mm):  
1-2 points

Points for flush volume

1	4.50 l/flush
2	4.20 l/flush

**Exposed flush valve  
Mechanical:  
Adjustable 4.5 to 9 litres**



Exposed WC flush valves:  
1 point

Points for flush volume

1	4.50 l/flush
---	--------------

**WC flush valve, concealed/  
exposed, electronic:  
Adjustable 4.5 to 9 litres**



Electronic WC flush valves:  
1 point

Points for flush volume

1	4.50 l/flush
---	--------------

**WC flush valve, concealed/  
exposed, mechanical:  
Adjustable 4.5 to 9 litres**



WC flush valves for manual  
flushing: 1 point,  
with cartridge LEED®  
29 758 00 99: 2 points

Points for flush volume

1	4.50 l/flush
2	4.00 l/flush

**Urinal, concealed/exposed,  
electronic (adjustable flow  
time 1 to 15 sec.)**



Urinal flush valves:  
Up to 6 points

Points for flush volume

1	2.85 l/flush
2	2.66 l/flush
3	2.47 l/flush
4	2.28 l/flush
5	2.09 l/flush
6	1.90 l/flush

# All day, every day

## Sustainability is day-to-day business at SCHELL

---

Business has to lead on the environment. That is why SCHELL carefully examines all of its energy and material flows. From eco-friendly transport and energy-saving lighting to reducing resource consumption in the office – SCHELL adopts a wide variety of measures.

### Sustainability in the round

Sustainability at SCHELL is based on a comprehensive, multi-dimensional approach. It is anchored within the company and exported in our products. Sustainability has always been a core part of our organisational DNA. SCHELL on the outside means sustainability on the inside. That's a promise.

### An eco-friendly workplace

Sustainability means much more than just resource-friendly production. So we've embedded it into day-to-day business at SCHELL: from our own charging stations for EVs to smart water management throughout our premises and the exclusive use of 100% green electricity, we continue to apply and improve our sustainable principles in practical terms.

### Our vision: cradle-to-cradle

We are committed to applying the cradle-to-cradle approach across the entire lifecycle of our products. From the design to product development, product usage and recycling, SCHELL therefore makes every effort to pursue the goal of a potentially infinite closed-loop economy. Raw materials and products are recycled and reused – which also helps others to become more sustainable. Anyone installing SCHELL products can depend on the no-compromise quality they offer, that lets users enjoy long-term planning, avoid costly conversion work and save key resources – especially water. At its production facility in Olpe, which features a compact site layout and low logistics costs, SCHELL is also extremely well-placed to keep its CO<sub>2</sub> footprint as small as possible.



### Quality in black and white

Our products and processes are tested continuously, and are certified to all of the relevant quality and safety standards. As one example, our SCHELL Quality Management System has been certified to

DIN EN ISO 9001:2015 by TÜV Rheinland.



Management System  
ISO 9001:2015  
[www.tuv.com](http://www.tuv.com)  
ID 9108624972

# ZERTIFIKAT STANDORTBILANZ



*Unternehmen*

**SCHELL GMBH & CO KG**

*Bilanzierungsgegenstand*

**CO2 FUSSABDRUCK UNTERNEHMEN SCHELL**

**BILANZIERUNGSZEITRAUM:** 01.01.2020 - 31.12.2020

**BESCHREIBUNG BILANZRAUM:** Beschrieben sind hier alle CO<sub>2</sub> Ausstöße am Standort nach dem Gate to Gate Ansatz.

*Emissionen & Beschreibung des Bilanzraumes*



**BILANZIERUNGSSTANDARD CCF:** Die Standortbilanz (CCF) stellt die Summe aller direkten und indirekten Treibhausgasemissionen eines Unternehmens, ausgedrückt in CO<sub>2</sub>-Äquivalenten (CO<sub>2</sub>e) und basierend auf einer Lebenszyklusanalyse der Emissionsverursacher, dar. Die Bilanzierung erfolgt gemäß der Anforderungen an die quantitative Bestimmung sowie an die Berichterstattung von Treibhausgasemissionen und deren Entzug auf Unternehmensebene nach ISO 14064-1:2012. Die Ergebnisse sind nicht als Vergleichsgrundlage für Unternehmen zu verstehen. Auch für ähnliche Unternehmen können Unterschiede bei den Berechnungseinheiten, der Lebenszyklusbetrachtung und der Datenqualität zu nicht vergleichbaren Ergebnissen führen.

28.4.2021

*Ort und Datum*



*Unterschrift*

**SCHELL GmbH & Co. KG**

Raiffeisenstraße 31  
57462 Olpe  
Germany  
Tel. +49 2761 892-0  
Fax +49 2761 892-199  
info@schell.eu  
www.schell.eu

**Customer support**

Tel. +49 2761 892-340  
customer.service@schell.eu