

ZugEstates

2021

Sustainability Report

in accordance with the GRI Standards, 26 August 2022

Contents

Introduction	3
Key figures	4
Reading material	5
Sustainable journey	6
1. Sustainability strategy	7
1.1 Sustainable business model	7
1.2 Values, ambitions and objectives	7
1.3 Material topics	8
1.4 Our stakeholder groups	11
1.5 Organisation	12
1.6 UN Sustainable Development Goals (SDGs)	12
2. Overarching topics	14
2.1 Innovation	14
2.2 Economic success	15
3. Environmental topics	18
3.1 Biodiversity	18
3.2 Energy and emissions	19
3.3 Materials	31
3.4 Water	32
4. Social topics	35
4.1 Attractive working environment	35
4.2 Development of living spaces	42
4.3 Interconnected communities	45
5. Governance-topics	47
5.1 Cooperative partnerships	47
5.2 Transparent communication	49
5.3 Responsible corporate governance	50
6. GRI content index	53

Introduction



We marked a major milestone in our company's history on 1 June 2022: the dismantling of our last oil-fired heating system. The step we took on that summer's day was preceded by the incorporation of another nine buildings into the Circulago lake water district, which supplies the City Centre site with renewable energy.

Doing so has enabled us to reduce our emissions by another 50% year on year, from 1.8 to the current figure of 0.9 kg CO₂ per m² of energy reference area, putting us far below the target for the 1.5-degree reduction pathway envisioned by the CRREM (Carbon Risk Real Estate Monitor).

But that doesn't mean Zug Estates is done with the topics of energy and emissions. Going forward, we'll be focusing more intensely on boosting our own power generation capacities as well as the consumption of regional, renewable sources of energy. Our solar installations at the Suurstoffi site produced 1140 MWh of electricity during the reporting period from 1 April 2021 to 31 March 2022, which corresponds roughly to the average power consumption of 250 single-family homes. We'll be installing solar installations at the City

Centre site to increase our own electricity production even further and selling it directly to our tenants through a private consumption community (PCC).

Sustainability targets play a major role in efforts to develop the Metalli Living Space in the heart of Zug, where nearly carbon-free operation is already a reality. Promoting biodiversity and a circular economy is our top priority as a result. Our plans also attach great importance to social topics like the creation of a wide variety of cultural and leisure offerings as well as the construction of affordable housing. This approach will enable Zug Estates to create long-term added value that benefits society, the environment and our stakeholder groups.

Both the results we've already achieved and our future efforts are the result of a sustainability strategy that was first implemented more than ten years ago and has been pursued systematically ever since. Sustainable principles and values are firmly entrenched in our company's DNA – at every level, from individual employees all the way to our board of directors.

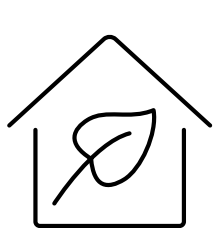
We hope you enjoy reading our sustainability report, which has been prepared in accordance with GRI Standards. You'll also find more articles on our commitment to sustainability on our website (www.zugestates.ch).

Zug, August 2022

A handwritten signature in black ink, appearing to read 'Patrik Stillhart', with a stylized flourish at the end.

Patrik Stillhart
CEO

Key figures



0.9 kg

Greenhouse gas emissions in kilogram per m² of energy reference area

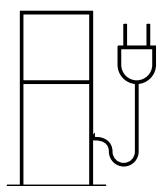
316

Number of customers in the private consumption community



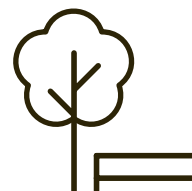
48

e-vehicle charging stations



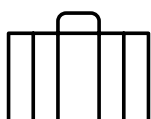
24

Buildings with solar installations (44% of all buildings)



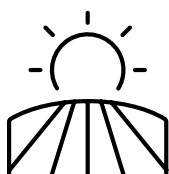
68 %

Percentage of certified outdoor spaces



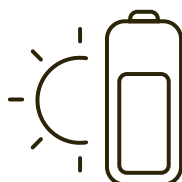
200 million

Volume of green bonds placed



62 kWh

Energy intensity per m² of energy reference area



1 140

Solar power production in MWh (enough to cover the needs of 250 single-family homes)

590 litres

Water consumption per m² of lettable area



138



Number of employees working for the Zug Estates Group

Reading material



"Change has to be incorporated into the landscaping concept"

Landscape architect and urban ecologist Jonas Frei knows what a diverse environment needs and how to create one.



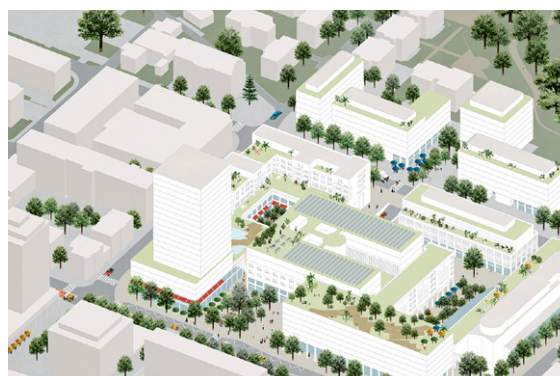
To the interview

Variety of different thrusts in the Metalli Living Space

Zug Estates tracks a wide range of sustainability-related topics in its efforts to develop the Metalli Living Space.



To the project



Green energy from the region

Zug Estates has successfully slashed its greenhouse gas emissions by nearly 95% since 2010. Going forward, we will be focusing more intensely on boosting our own power generation as well as the consumption of regional, renewable sources of energy.



To the article

Grow with us

Collaboration with our partners Switzerland Innovation Park Central and Spaces (co-working) puts Zug Estates in a position to offer the companies at the Suurstoffi site a multitude of different options when renting office space.



To the article



Sustainable journey



January 2010

Grand opening of City Garden Hotel: Zug Estates' first wooden building

June 2010

Groundbreaking ceremony for the carbon-free Suurstoffi site

April 2018

Urban gardening project launched at the Suurstoffi site

January 2015

Central Switzerland's largest wood construction project completed



July 2018

First wooden high-rise in Switzerland

September 2019

Private consumption community launched at the Suurstoffi site

First green bond placed by a Swiss real estate company



November 2019

Aglaya garden high-rise completed

Grand opening of the tallest wooden high-rise in Switzerland

April 2020

Metalli complex connected to the Circulago lake water district

June 2020

Metalli Shopping Centre: first high-power, rapid e-vehicle charging stations in the city of Zug





2021

Another nine buildings connected to Circulago

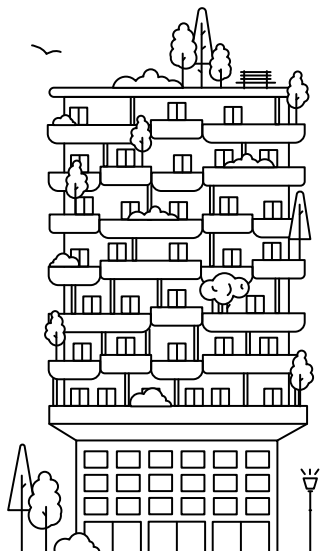


July 2022

First photovoltaic system installed at the City Centre site (symbolic image)

End of 2023

Target: nearly carbon-free operation of the entire portfolio



May 2021

"Sorglos mobil" (Carefree Mobility) pilot project launched



January 2022

Second green bond placed

June 2022

Last oil-fired heating system dismantled



August 2022

V2X pilot project: bidirectional charging – cars as battery storage devices



From 2026

Metalli Living Space: focus on sustainable development



1. Sustainability strategy

1.1 Sustainable business model

GRI 102-2, 102-4, 102-6, 102-7, 102-9, 102-11, 102-12, 102-13

The Zug Estates Group conceives, develops, markets and manages properties in the Zug region. It focuses on central sites which are suitable for a wide range of uses and allow sustainable development. The real estate portfolio is located at two sites in Zug and Risch Rotkreuz (both in the Canton of Zug, Switzerland) and is broadly diversified by type of use. The wide mix of uses is part of the Group's business strategy and comprised residential (26%), office (26%), retail (17%), parking (7%), hotel & catering (9%), education, leisure and culture (7%) and other (8%) at the end of 2021. Together, the two sites offer living space for around 2 100 people plus more than 4 000 workspaces. The total value of the portfolio came to CHF 1.70 billion as at 31 December 2021. Zug Estates Holding AG had 138 employees (number of people, not full-time equivalents) as at 31 December 2021.

Via its subsidiary Hotelbusiness Zug AG, the Zug Estates Group operates a city resort in Zug comprising two leading business hotels, Parkhotel Zug and City Garden, as well as serviced city apartments. This offering is geared towards business clients and has a capacity of around 250 accommodation units plus ancillary catering facilities.

The sites are being developed in line with the sustainable principles described in detail in this report. One of the most important outcomes of our sustainability strategy to date has been the nearly carbon-free operation of our entire property portfolio. Not only that, but when designing the outdoor spaces, Zug Estates attaches great importance to high-quality, varied green spaces that offer people a place to relax and convey a sense of well-being. The Metalli Living Space is also envisioned to become a popular place where the people of the city of Zug can meet and spend time. One that is used even after shops close and on weekends. This approach will enable Zug Estates to create long-term added value that benefits society, the environment and our stakeholder groups.

1.2 Values, ambitions and objectives

Sustainable principles and values are firmly entrenched in our company's DNA – at every level, from individual employees all the way to our board of directors. Group management and the board of directors already began discussing their vision of a carbon-free site – the Suurstoffi site – more than fifteen years ago. Even then, decision-making executives were aware of the fact that the future lies in renewables and that greenhouse gases needed to be reduced both swiftly and substantially.

An example of what these efforts have produced can be seen in how the Suurstoffi site has evolved. There, Zug Estates forged new paths not only in terms of energy and emissions, but also through its emission-free energy system. This green, spacious, traffic-free site is also impressive in terms of offering a pleasant place for leisure activities and a high quality of life – important criteria for our tenants' well-being. The site also boasts the Aglaya garden high-rise as well as two wooden high-rises – the first and currently the highest in Switzerland. Zug Estates has always succeeded in being one step ahead with its projects.

With the consequences of human-induced climate change intensifying, the focus is shifting to the importance of reducing the amount of greenhouse gases. Awareness of sustainability-related topics is growing not only among customers, analysts, investors and the media, but also in society. At the same time, expectations are also rising that companies produce comprehensive ESG reports that not only factor in environmental issues, but social and governance issues, as well. Zug Estates takes its responsibility seriously and has made a commitment to upholding binding sustainability goals. Zug Estates embraces a net zero approach. Under this approach, we systematically reduce greenhouse gas emissions and prevent them whenever possible.

Last but not least, Zug Estates Holding AG is committed to the principles of good corporate governance. This is shown by its efficient management structure, extensive control mechanisms and transparent information policy. The Code of Conduct¹ sets out rules for ethically correct conduct for all employees of the Zug Estates Group; the Code of Conduct is given top priority.

¹ <https://zugestates.ch/corporate-governance>

Our promise

- Energy and emissions: 100% carbon-free operation thanks to the zero-zero strategy
- Development of living spaces: attractive spaces for a higher quality of life
- Economic viability: sustainability implemented at a profit
- Innovation: innovation offers added value for people and nature
- Materials: promoting a circular economy through a targeted choice of materials

Most important goals

- shrink the carbon footprint related to the operation of the properties (Scopes 1 and 2) to nearly zero (first zero) by 2023.
- Increase our own production of electricity through the use of photovoltaic installations and purchase power from regional renewable sources of energy (second zero).
- Reduce construction-related carbon emissions and promote the circular economy. This will play an important role in the future development of the Metalli Living Space, in particular.
- Strengthen biodiversity by adding greenery to squares, roofs and façades.

1.3 Material topics

GRI 102-46

Zug Estates decided last year to publish its sustainability report in accordance with the GRI Standards for the first time and to embrace a holistic approach in its ESG (environmental, social and governance) reporting. These changes were implemented with the goal of presenting the Group's sustainability-related performance in a more transparent and comparable way.

To define the most relevant ESG topics, Zug Estates assembled an interdisciplinary task force in 2020/2021 comprised of members of Group management and internal specialists. The task force included representatives from all relevant business units and processes such as Risk Management, Procurement, Compliance, Property Management, Strategic Site Management and Communication. This process was monitored by a consulting firm that specialises in sustainability strategies.

A list of topics (longlist) was compiled based on internal and external sources (see figure below). Topics are selected and defined based in part on feedback received from a variety of stakeholder groups and obtained through tenant surveys, employee feedback from brown bag events, roadshow feedback, meetings with shareholders, investors and banks as well as assessments by ESG experts.

Internal sources

- Annual report
- Sustainability report
- Guidelines and targets
- Risk analysis results
- Relevant market analyses
- Internal surveys and interviews
- Tenants surveys from past years

List of topics (longlist)

External sources

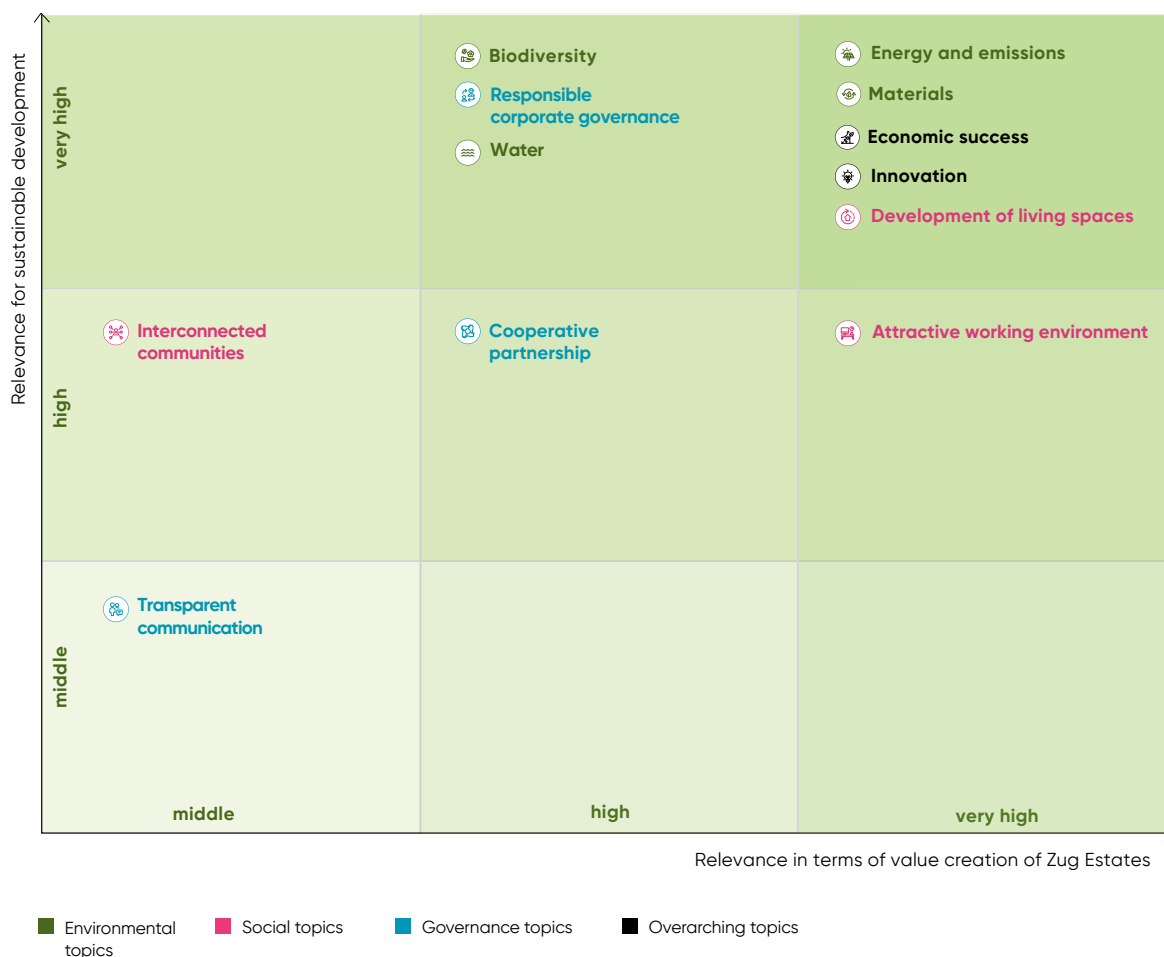
- GRI Standards, incl. sector supplement
- SASB industry standards
- Industry-specific standards and guidelines
- Comparisons with competitors / sustainability reports
- Analysts' reports and media analyses
- External stakeholder surveys (shareholder, investor and bank meetings)
- UN Sustainable Development Goals (SDGs)
- ESG evaluations

The topics were evaluated and assessed by the task force's internal experts during a workshop aimed at identifying the relevance of the various topics in terms of value creation at Zug Estates. Selected stakeholders were also asked about the topics' relevance during one-on-one discussions. This process took place in close consultation with Group management and the board of directors of Zug Estates Holding AG. Twelve topics emerged as material and form the basis for the materiality matrix below. The matrix will be

re-assessed by the Sustainability core team and adjusted where needed in consultation with Group management and the board of directors.

The topics shown establish a structure for this report, which was prepared in accordance with the GRI Standards, and help us further develop our sustainable business activities in line with current and medium-term priorities.

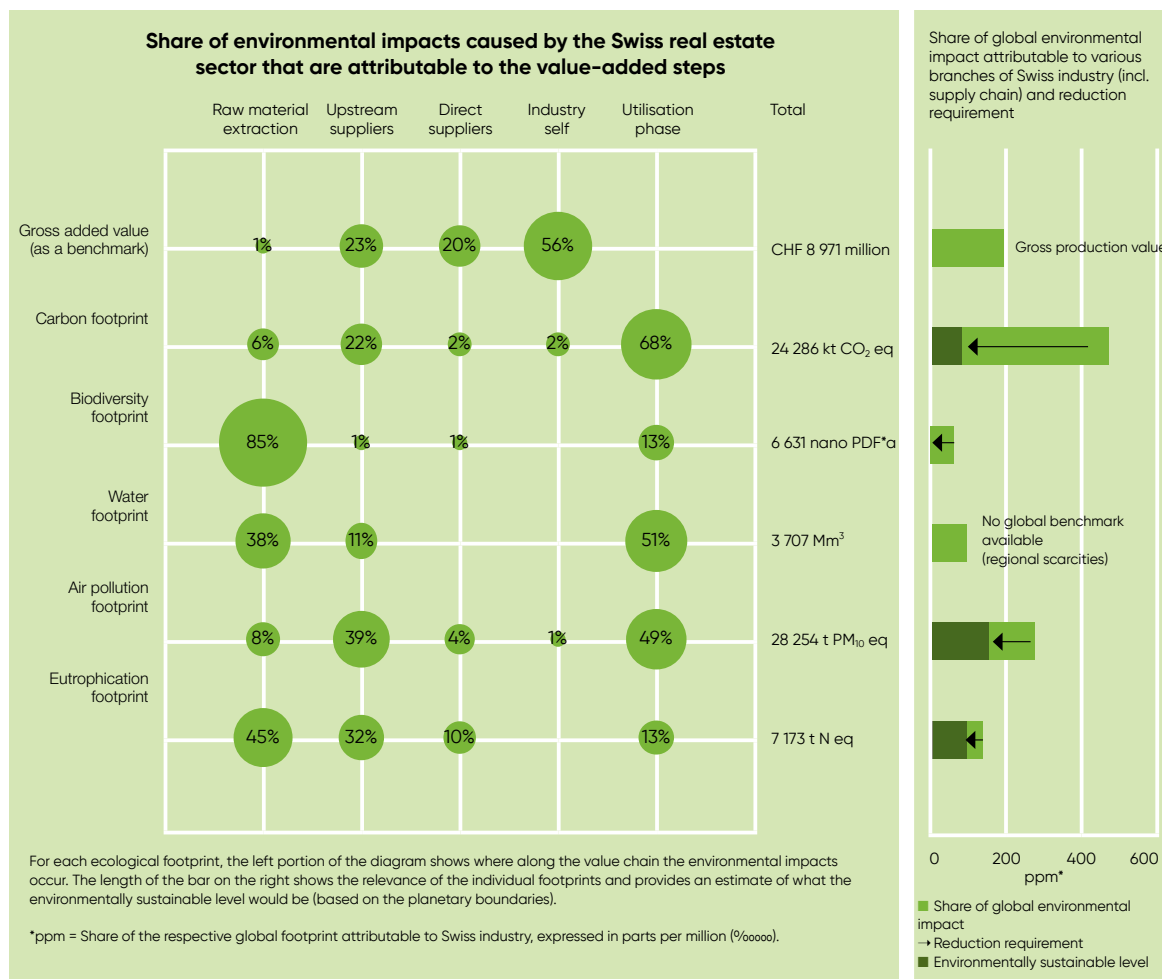
GRI 102-47



As shown in the materiality matrix, Zug Estates is still mainly focused on environmental topics – and for good reason. As a real estate company, we firmly believe that our impact on sustainable development will be biggest by far in the area of environmental issues, particularly if we focus on reducing greenhouse gas emissions. These strategic considerations are underpinned by a 2019 study entitled “Environmental hotspots in the supply chain of Swiss companies”² that was commissioned by the Federal Office for the En-

vironment. This study points out where which sector causes the biggest environmental impact along their respective value chains. It also shows that carbon reductions are most urgently needed in the operation of buildings – an approach that Zug Estates has been successfully pursuing for over ten years (see “Reduction path” on page 19).

² https://www.bafu.admin.ch/dam/bafu/en/dokumente/wirtschaft-konsum/externe-studien-berichte/Environmental%20hotspots%20in%20the%20supply%20chain%20of%20Swiss%20Companies_FinalReport_EN.pdf.download.pdf



1.4 Our stakeholder groups

GRI 102-40 and 102-42

The most important stakeholder groups of Zug Estates Holding AG are as follows:

- Shareholders and investors
- Tenants
- Employees
- Public and population of Zug
- Business partners and suppliers
- Analysts
- Media

The most important stakeholder groups are either impacted to a large degree by the business activities of Zug Estates Holding AG or exert a major influence on the company (102-42). Zug Estates communicates regularly with its key stakeholders. You can find information about our approach to getting them involved as well as an overview of key topics and concerns raised by these groups on page 40.

1.5 Organisation

To satisfy existing and future challenges, several different organisational measures were taken during the year under review.






The Sustainability core team was created in 2021. This team is comprised of an interdisciplinary group of five Zug Estates employees, two of which being the CEO and the Head of Project Development. Meetings are conducted on a monthly basis. The team monitors the key sustainability projects, proposes new project ideas and incorporates the topics into the activities and mindset of all Zug Estates staff. Within the scope of strategy development, the team reviews the materiality matrix and management approaches once a year and uses the insights from those reviews as a basis for defining which measures are needed.

There is a person responsible for each topic in the materiality matrix. This person oversees developments in their area of responsibility and reports regularly to the Sustainability core team.

Zug Estates' Group management has two representatives on the Sustainability core team who address issues as needed directly at monthly Group management meetings. This approach ensures short decision-making channels and swifter response times. The topic of sustainability is also a regular agenda item at board of directors meetings.

1.6 UN Sustainable Development Goals (SDGs)

Zug Estates contributes to the following Sustainable Development Goals³:

	Goal	Our contribution	Material topic for Zug Estates
	Ensure access to affordable, reliable, sustainable and modern energy for all	<p>Access to the private consumption community gives our tenants sustainable energy at attractive terms and conditions (see page x)</p> <p>The energy needed to run buildings (heating, hot water and air conditioning) is largely purchased from renewable sources (Goal 7.2).</p>	Energy and emissions
	Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation	<p>Zug Estates has implemented several sustainable projects with a national impact, including the anergy system at the Suurstoffi site, the first wooden high-rise in Switzerland and the Aglaya garden high-rise. We are currently involved in two e-mobility projects: "Sorglos mobil" and "V2X" (Goal 9.1).</p>	<p>Innovation</p> <p>Cooperative partnerships</p>
	Make cities and human settlements inclusive, safe, resilient and sustainable	<p>Zug Estates set the tone across all of Switzerland with its Suurstoffi site. It was developed in line with key sustainability topics including energy, emissions, materials, biodiversity and mobility. Topics that play a crucial role in the development of the Metalli Living Space in Zug's city centre include not only environmental topics but social topics, as well. A portion of the apartments being built are in the low-priced segment, for instance. Other important project goals include good interconnectedness with surrounding quarters and neighbourhoods as well as the creation of extremely pleasant public spaces (Goals 11.1, 11.3, 11.6, 11.7).</p>	Development of living environments
	Ensure sustainable consumption and production patterns	<p>20% of all lettable area is located in hybrid buildings made of wood (Goal 12.2).</p> <p>Hotelbusiness Zug AG participates in the "Too Good To Go" project aimed at combating food waste (12.3).</p> <p>We are drawing up a concept for the Metalli Living Space project that is designed to meet the principles of the circular economy to the greatest degree possible (Goal 12.5).</p>	Materials
	Take urgent action to combat climate change and its impacts	<p>Renewable local energy systems, renewable building materials (wooden construction), a high level of energy efficiency in newly constructed buildings and green spaces in outdoor areas improve the sites' adaptability to climate-related hazards (Goal 13.1).</p> <p>Zug Estates has demonstrated its pioneering spirit over and over again through the anergy system, the first wooden high-rises in Switzerland and the garden high-rise. These efforts have helped the company raise awareness of and educate people on the topic of sustainable infrastructure. We aspire to do the same in our Metalli Living Space development project (Goal 13.3).</p>	<p>Energy and emissions</p> <p>Materials</p>

³ <https://www.eda.admin.ch/agenda2030/de/home/agenda-2030/die-17-ziele-fuer-eine-nachhaltige-entwicklung.html>

2. Overarching topics

2.1 Innovation

Relevance

At Zug Estates, we leverage innovation as a means of boosting the quality of our products and services and also for optimising our processes. The topic of innovation is also pivotally important to the Group's commercial success, given the multitude of ways it impacts the Group's business activities.

Continuous innovation is essential for us to hold on to our competitive edge over the long term and meet the expectations of various stakeholder groups, particularly those of our customers. Sustainability is one central driver of innovation. Our zero-zero goal, the circular economy and our aspiration of promoting biodiversity at our sites force us to question established practices and try new things – over and over again. Technology plays a major role in all this, as it helps us create smart, interconnected neighbourhoods that are more efficient and offer clear added value to users, for the environment and with respect to our economic success.

How we address the topic

Under the supervision of the Head of Strategic Site Management, Zug Estates is currently focused on selected innovation-related topics and advances those topics in a targeted manner. All topics related to innovation are listed in a central file and reviewed together with the project managers at regular intervals.

Zug Estates attaches great importance to establishing innovation as an integral part of its corporate culture. That also means ensuring that employees discuss new developments on a regular basis at brown bag lunches, for instance. Tours of innovative projects and properties are given several times a year. Some of those include the "Am Aawasser" project in Buochs, the headquarters of the Circulago lake water district and the Seebrighof development in Hausen am Albis.

Innovative, pioneering projects

- Site development: unique site concept (Suurstoffi) with respect to architecture, greenery and energy efficiency
- Renewables: anergy network and PCC across the entire Suurstoffi site
- Wooden construction: first (S22) and highest (Arbo) wooden high-rises in Switzerland
- Green façade: Aglaya garden high-rise
- Mobility: Sorglos mobil (Carefree Mobility)

- V2X: cars as energy storage devices (bidirectional charging)

We work together with external partners in order to establish an open approach that promotes innovativeness even more firmly in all areas of the Group's business activities. We regularly exchange information with other players in the industry in order to benefit from each other's experience. We are also a core member of Switzerland Innovation Park Central in Rotkreuz, where our employees regularly attend innovation workshops. We have additional innovation partnerships established with a variety of research institutions including the Lucerne University of Applied Sciences and Arts (HSLU), for example. Our collaboration with HSLU allows us to have scientific studies conducted on a regular basis in order to test and refine our ideas. HSLU will launch a long-term, seven-year study through the SWEET funding programme of the Swiss Federal Office of Energy (SFOE) in 2023. This study will look at ways to attain an efficient, sustainable lifestyle while also simultaneously improving residents' quality of life at various sites and settlements, one of which being the Suurstoffi site.¹ Zug Estates has been exploring the possibility of bidirectional charging since the summer of 2022 through its involvement in the V2X pilot project, which is being funded in part by the Swiss Federal Office of Energy and Mobility. That means: e-vehicles serve as energy storage devices and feed electricity back into the grid when not currently in use.

Results and evaluation

Our many different prizes, awards and accolades on a multitude of topics are testimony to our pioneering spirit.

- 2022: 2nd place among Switzerland's most eco-friendly companies
- 2018: Prix Lignum silver medal for the first wooden high-rise in Switzerland
- 2018: Award from the Swiss Association for Location Management (SVSM) for the Suurstoffi site
- 2018: Arc Award for BIM Innovation (Suurstoffi site)
- 2017: Arc Award for BIM Innovation (Aglaya garden high-rise)

These results motivate us to push ahead with our efforts to seek out innovative solutions, examine how they might benefit our stakeholders and implement those solutions if benefits are found.

¹ <https://www.hslu.ch/de-ch/wirtschaft/ueber-uns/news/2022/07/01/sweet-projekte/>

2.2 Economic success

Relevance

Zug Estates aspires to plan, develop, implement and operate living environments for users and tenants that are both attractive and sustainable. This is a promise that we can only keep if we operate profitably over the long term, which will then put us in a position to fulfil our obligations to relevant stakeholder groups (including shareholders and investors, employees as well as business partners and suppliers). By the same token, only sites that are successful in the long term offer the prerequisites for stable economic success.

How we address the topic

Zug Estates pursues a policy of active growth and its next goal is to develop the City Centre site in Zug. It will also examine the acquisition of another development site that offers a broadly diverse range of potential uses. Yet we do not view growth as an end in itself. We only make acquisitions if there is a balanced

relationship between quality and the commercial conditions. This approach allows us to safeguard our long-term financial stability. It also requires that we keep our debt ratio at a moderate level and aim for broad diversification among our lenders and a balanced term structure.

Another important instrument for safeguarding our economic success is our comprehensive risk management system. We regularly identify, analyse and control business risks within the scope of a clearly defined process that involves all levels of the hierarchy, up to and including the board of directors. The relevant risks also explicitly include climate change and its myriad repercussions. Zug Estates closely monitors technical and regulatory developments within the scope of its annual risk analysis to ensure that it is capable of identifying risks and seizing opportunities in a timely manner.

Climate-related risks are listed in the table below.

Climate risk	Consequences	Assessment	Measures
Climate change is causing rising temperatures, sustained heat waves and an increase in the number of hot days.	Buildings are requiring more air conditioning, and the energy needed for that is causing costs to rise.	The energy system at the Suurstoffi site and the Circulago lake water district are able to supply the energy needed for cooling.	Targeted adjustments are planned in the Suurstoffi power system (e.g. night cooling).
The heat island effect is causing cities to become steadily warmer and	our sites are also being impacted by rising temperatures. Since the heat island effect negatively impacts people's well-being, it not only diminishes a location's attractiveness but reduces the demand for housing, as well.	At its own sites (and at the City Centre site, in particular), Zug Estates is in a position to take steps to cool down the microclimate.	Use of greenery, bodies of water and shade. From a construction standpoint, the choice of materials used for the building's exterior is a crucial factor for improving the microclimate. Preventing heat islands and creating shady spaces are central topics in the Metalli Living Space development project.
Extreme weather events will be on the rise. Stronger storms and torrential rains are expected.	There will be an increase in the number and magnitude of loss events involving buildings and their surroundings. Insurance costs can be expected to rise.	According to Zug's hazard map ² , the sites operated by Zug Estates are not located in higher-risk areas (landslides, flooding, rockfall). No special preventative measures are necessary.	8Structural measures are inspected and optimised on a regular basis. Insurance cover is adjusted and optimised.
Taxes and carbon taxes will increase as a means of reducing greenhouse gas emissions.	Replacement of carbon-intensive heating systems.	Since the portfolio is currently operated in a way that is nearly carbon-free, the risks posed by rising prices for greenhouse gas emissions or the cost of switching to lower-emission technologies are extremely limited.	And even when it expands its portfolio, Zug Estates will continue to rely on carbon-free heating and cooling systems.

² <https://zugmap.ch/bmcl/?project=ZugMap.ch&legend=alle%20Themen&rotation=0.00&scale=51802¢er=2684000,1224000>

Zug Estates' impressive track record in terms of sustainability helps the Group raise borrowed capital. Back in 2019, for example, we became the first real estate company in Switzerland to issue a CHF 100 million green bond. Zug Estates placed a second green bond for CHF 100 million in January 2022. This means that the bond portfolio consists entirely of financial instruments focused on sustainability.

Results and evaluation

GRI 201-1 Direct economic value generated and distributed

Please refer to the Annual Report 2021 of the Zug Estates Group.

3. Environmental topics

3.1 Biodiversity

Relevance

Life on our planet relies on diverse ecosystems. For humankind to continue to exist in the long term, it is imperative that we consider biodiversity a pivotal factor when designing our habitats. That also applies in our line of business. Urbanisation has caused a sharp increase in urban development and soil sealing in recent decades and those, in turn, have had a negative impact on ecosystems. At Zug Estates, we take this topic seriously and take biodiversity-related aspects into consideration in order to promote biodiversity in all our sites' outdoor spaces. Our properties' outdoor spaces are intended as places where people can meet, spend time and relax; they promote a sense of well-being and create an identity. Not only that, but they should also offer ideal conditions for plants and animals to live and promote biodiversity.

How we address the topic

We pursue the following goals to achieve the highest possible level of biodiversity on our sites:

- When planning new outdoor spaces, we are mindful of measures that promote biodiversity.
- We strive to manage all outdoor areas in a way that promotes biodiversity.
- Invasive plant species are not desired on Zug Estates sites and are removed on a regular basis. Native plants are used whenever possible and in suitable locations.

Specific measures to reach these goals range from complex projects such as natural landscape design to small, easy-to-implement steps.

To help us promote biodiversity in a targeted way going forward, the Sustainability core team examines new measures and ways to optimise our portfolio of existing properties on an ongoing basis. We will also be prioritising the aspect of biodiversity when developing the Metalli Living Space project and collaborating with the planners to come up with measures that help us make the City Centre site even greener. To that end, nateco AG of Gelterkinden assessed the green spaces currently found on the 33576 m² plot of land earmarked for the two new development plans for Metalli and Bergli. The report, which was drafted in May 2022, documents the current condition of the green spaces on the site and on adjoining plots of land with respect to biodiversity and formulates rec-

ommendations on how to promote biodiversity. This report will have an impact on future plans for the Metalli Living Space.

High-quality beds of perennials, a mix of different elements including urban and residential gardens, a neighbourhood park and bodies of water are visible signs of this strategy on the Suurstoffi site. Rooftops and façades are also included as potential spaces for promoting biodiversity. Zug Estates showcased green façade concepts with its Aglaya garden high-rise on the Suurstoffi site, where more than 15000 plants grow vertically on the walls of the 70-metre-tall building. Birds' nests and the sight of insects and butterflies all the way up to the very top floor offer indications that the area's biodiversity has increased.

Results and evaluation

GRI 304-3 Habitats protected or restored

All 105657 m² (68% of all properties belonging to Zug Estates) of the Suurstoffi site have been certified by the Nature & Economy Foundation. The certificate is awarded to sites whose special ecological value make an important contribution to preserving natural biodiversity and enable the residents to cultivate a vibrant relationship with nature. The criteria were prepared by the foundation's sponsors in consultation with the cantonal planning authorities as well as specialists from the realms of nature conservation, landscape architecture and urban development.

Successful certification hinges in part on compliance with the following minimum requirements, which have been confirmed for the Suurstoffi site:

- At least 30% of the surrounding land is designed to be nearly natural and structurally varied.
- No more than 30% of the surrounding land may be sealed.
- Near-natural spaces must be filled with a highly diverse range of indigenous plant species that are appropriate for the site.
- No biocides or fertilizers will be used in near-natural spaces.
- Near-natural meadows will be cut no more than twice a year.

The complete list of criteria for residential sites can be found on the Nature & Economy Foundation website.¹

¹ https://www.naturundwirtschaft.ch/assets/Dateien/Files/Medienmitteilungen/346/Antragsformular_Wohnen_28042021_interaktiv.pdf

3.2 Energy and emissions

Relevance

Zug Estates agrees with the scientific consensus that the climate change we are currently experiencing is largely anthropogenic in origin. Greenhouse gas emissions amplify global warming and lead to the climate change that has already begun. This impacts both people and nature. Some 40% of greenhouse gas emissions in Switzerland are caused by the real estate industry.

The Federal Council adopted Switzerland's long-term climate strategy on 27 January 2021 and approved its submission to the United Nations Climate Change Secretariat. This move put Switzerland in compliance with the Paris Agreement, which calls on all countries to develop climate strategies for the period until 2050. If global warming is to remain below 1.5 degrees Celsius with a sufficiently high level of probability, global carbon emissions must drop to net zero by the middle of this century at the latest. That means any carbon still being emitted at that point in time must be completely and permanently removed from the atmosphere through sinks (negative emissions).

Zug Estates is aware of its responsibility on the topic of climate change. Zug Estates pursues two goals with its zero-zero approach: first, no emissions must arise in connection with the operation of the buildings and, second, as much self-generated energy as possible must be produced and any energy purchased from third parties must stem from regional sources. As the operation of its buildings will be nearly carbon-free in as early as 2023 (Scopes 1 and 2), Zug Estates is now focusing its efforts in the area of energy and emissions on increasing the amount of electricity it generates through renewable sources (photovoltaics) and purchasing any electricity it is unable to generate itself from regional sources.

The Group aims not only to reduce carbon emissions from operations to the best of its ability, but also carbon emissions from construction activities (see the management approach to materials). We will factor this topic into our future development plans for the Metalli Living Space.

Zug Estates embraces a net zero approach with the goal of systematically reducing greenhouse gas emissions or preventing them if possible. The Group's strategy does not include any carbon offset projects.

Efforts in the area of energy and emissions are focused on four action areas where Zug Estates embraces ambitious, far-reaching goals that exceed both the legal requirements and industry benchmarks. To reach these ambitious goals, Zug Estates implements a comprehensive assortment of measures under the leadership of Strategic Site Management. These four action fields are explained in detail in the following.

3.2.1 Action field: emissions

Goals

Our goal is to nearly eliminate greenhouse gas emissions (Scopes 1 and 2) from the operation of Zug Estates' entire real estate portfolio by 2023. In doing so, we will be far ahead of the timeline required by both the Federal Council's energy strategy and the Paris Agreement. Our goal factors in any greenhouse gas emissions that arise in connection with the heating and cooling systems and the production of operating current as well as emissions from our own fleet of company vehicles.

Measures

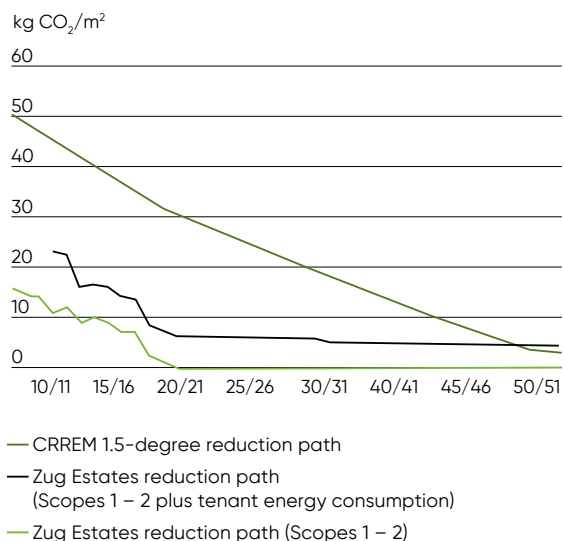
The Suurstoffi site was planned and built in line with the zero-zero approach from the very start. The Zug City Centre site will be gradually connected to the Circulago lake water district so that all heating, cooling and water heating for all properties at the City Centre site will be nearly carbon-free by the end of 2023. The Bären restaurant is the only property where this makes no sense, both for economic and ecological reasons. This switch is planned to correspond with development work on the Metalli Living Space, which will give rise to enormous synergies.

Another nine buildings were refitted and connected to the Circulago system during the reporting period from between 1 April 2021 and 31 March 2022. Biogas certificates that compensate for gas-based peak load coverage in the lake water district enable this system to be operated entirely without fossil fuels. The company's own fleet of vehicles will also be fully carbon-free by the end of 2023.

Results

Zug Estates has slashed its greenhouse gas emissions by nearly 95% (Scopes 1 and 2) since 2010. That puts Zug Estates in the vanguard of the Swiss real estate sector. With emissions currently at 0.9 kg CO₂eq per m² of energy reference area (ERA), Zug Estates is already far below the 1.5-degree reduction path called for by the Carbon Risk Real Estate Monitor (CRREM), an EU-funded research project that aims to promote energy efficiency and reduce carbon-risk factors in the real estate sector.

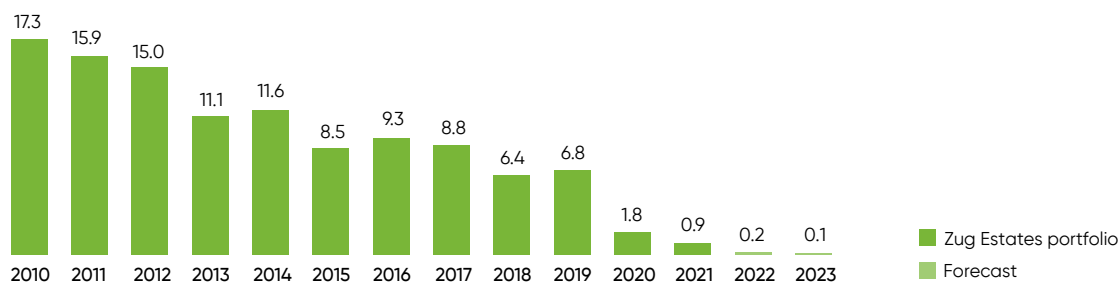
CO₂ reduction path Zug Estates real estate portfolio and climate goals 2050



In the 2022 and 2023 reporting periods, greenhouse gas emissions are expected to drop to 0.2 or 0.1 kg per m² of energy reference area. This will be done by connecting additional buildings to the Circulago lake water district by the end of 2023. From that point onward, this energy source will meet the heating, cooling and hot water needs of all buildings in the City Centre site except for the Bären restaurant.

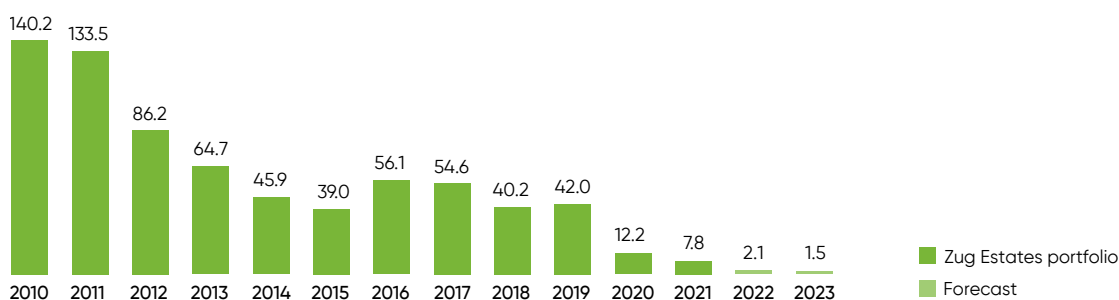
Reduction path Scopes 1 + 2 Zug Estates portfolio

Particularly greenhouse gas emissions [kg/m² EBF]



Reduction path non-renewable primary energy

Particularly primary energy non-renewable [kWh/m² EBF]



Energy intensity

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Final energy consumption kWh/m ² of energy reference area	171	156	147	119	103	85	89	91	73	72	61	62

3.2.2 Action field: energy origin

Goals

We attach importance to ensuring that the energy used for heating and cooling as well as the operating current for the building portfolio stems from regional and renewable sources. By 2025, it should be possible to cover 100 percent of our operating current through renewable sources in the region. 1 140 MWh of power was generated by the Group's own PV installations during the 2021 reporting period; this is enough to meet the electricity requirements of some 250 single-family homes. The amount of power produced locally on our sites will continue to increase as solar capacities are expanded.

Measures

One of the most important measures relates to the transition from internationally sourced oil and gas to energy production through the regional Circulago lake water district. Solar energy production (for electricity and heat) will be expanded on the company's own sites at the same time. The electric power distri-

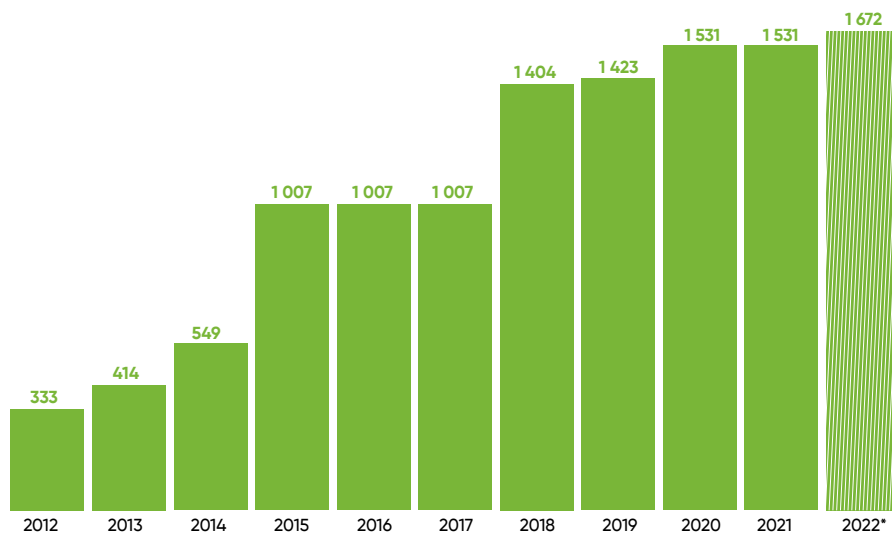
bution systems for all PCC (private consumption community) properties on the Suurstoffi site were already integrated into the PCC back in 2020. These enable Zug Estates to sell the electricity generated on site to tenants at attractive terms. Both sides benefit from this arrangement as tenants pay less for our electricity than they would through the local electric company and we earn more than we would through the feed-in compensation.

The amount of self-produced power will also increase gradually at the City Centre site. The first project will be the construction of six PV installations on Haldenstrasse in summer 2022. Here, too, tenants have the option of joining the PCC.

Any additional electricity required for the Group's operations will be obtained from renewable sources in the region, with the share of this regionally sourced electricity gradually being expanded until full regional coverage is achieved by the end of 2025. Zug Estates has been purchasing most of its guarantees of origin for electricity from a run-of-river power plant in the region since 2021.

Results

Installed photovoltaic capacity in kWp



* Forecast

Key photovoltaic figures as at 31.12.2021

	Total	Suurstoffi	City Centre site/ Metalli
Number of buildings	54	28	26
Number of buildings with PV installations (share as a percent)	24 (44.4%)	24 (85.7%)	0 (0%)
Properties with meaningful PV potential	37	24	13
Implementation rate of PV installations on buildings with meaningful PV potential	64.8%	100%	0%

The number of PCC customers at the Suurstoffi site rose to 316 as at 31 December 2021. This corresponds to an increase of 16% compared to 31 December 2020. As the PCC customer base increases, a growing percentage of the power produced at the site will be used on-site. Private consumption rose from 60% to 86%, causing the feed-in to the public grid to decline from 40% to 14%.

3.2.3 Action field: energy consumption

Goals

We intend to optimise the energy consumption of our site infrastructure and get tenants involved in implementing measures designed to boost efficiency. Specifically, we aim to achieve a continuous relative reduction in our operational power consumption by 2030 (operating current per m² of energy reference area). We also want to create incentives for customers in the PCC to reduce their power consumption.

Building energy efficiency and lighting strategy:

- Minergie standard as the minimum goal for new buildings
- Electrical equipment with consumption levels in compliance with the best standard currently in place for new buildings
- Convert lighting to LED and run it on an as-needed basis
- Smart control system for indoor environments: heating and cooling are based on environmental conditions and optimised. In summer, the air conditioning system is automatically adjusted based on the outdoor temperature (Suurstoffi).
- Smart building automation systems are used in all buildings built before 2010. In refurbished buildings, the systems are upgraded wherever possible.

Measures

Zug Estates analyses the performance of its own site infrastructure on an ongoing basis and uses that data to devise measures aimed at optimising its operations. These measures include improvements in the energy generating systems, distribution systems and lighting systems, for example. Zug Estates is also planning to introduce incentive schemes in the future that could positively impact tenants' energy consumption. Those schemes could include measures such as showing tenants their own resource consumption data to help raise their awareness and possibly encourage them to reduce their own consumption.

One of the ways we optimised our energy consumption in 2021 was by converting the lighting in an underground car park at the Suurstoffi site to LEDs and we plan to convert another area this year.

Results

Since 2010, we have succeeded in reducing operating current by more than 70% per m² of energy reference area. Operating current comprises general electricity as well as the power required for the energy centres (incl. power for heat pumps).

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Operating current kWh/m ² of energy reference area	87	79	75	65	44	40	40	41	36	34	26	26

Building certifications

None of the buildings belonging to Zug Estates had been certified at the end of 2021. Zug Estates measures energy and emission data based on actual values instead of theoretical projections. The concept was worked out together with the Lucerne University of Applied Sciences and Arts in 2010 and has been refined on an ongoing basis.

OekoWatt GmbH conducted a review of buildings on the Suurstoffi site; based on this review, it was determined that the buildings satisfy the requirements for Minergie certification (measured against the standards that applied at that point in time).

In order to accommodate the demands made by tenants or requirements of the ESG rating, the Sustainability core team of Zug Estates is examining whether individual buildings or entire sites should be certified.

3.2.4 Action field: mobility

Goals

We use targeted measures to promote carbon-free mobility by creating the best possible conditions for using public transport, electromobility and other environmentally friendly modes of mobility. Our goal is to continuously reduce the number of kilometres our employees commute using private motorised transport by creating suitable incentives. We also plan to continuously increase the number of charging stations for electric vehicles in Zug Estates' overall portfolio.

Measures

By setting up e-vehicle charging stations on the Metalli and Suurstoffi sites, Zug Estates is creating the conditions needed for its tenants to conveniently transition to e-vehicles. We conducted a survey to gain a more precise understanding of our tenants' future mobility behaviour. That will allow us to better plan the installation of additional charging stations in order to accommodate the increased demand that comes with e-mobility expansion. The "Sorglos mobil" concept for carefree mobility on the Suurstoffi site is also designed as an incentive to encourage people to forego having a car of their own.

Within our own company, we help our employees get by without a parking space by giving them a generous commuter allowance either to cover the cost of using public transport or as a financial contribution toward the cost of a bike. Zug Estates employees who commute to work in an electric car have also been provided with a free charging station at work since 2021.

The year under review saw Zug Estates reduce the number of fossil fuel vehicles used for hotel operations from two to one. The remaining vehicle is scheduled to be replaced by an electric vehicle by the end of 2023.

The first public charging stations will be commissioned on the Suurstoffi site in August 2022. Additional public charging stations are also planned for the Metalli Shopping Centre.

For more information about mobility with respect to site development, see page 36.

Results

The solution Zug Estates has arranged with Energie 360° gives 100% of Zug Estates tenants the opportunity to receive an e-parking space.

There were 37 use contracts for e-parking spaces as at 31 December 2021 (previous year: 18). Compared to last year's report, this figure does not include the private charging stations of Aglaya condominium owners and the companies that are currently leasing space there. Initial forecasts show that the number of use contracts will continue to rise in 2022, as well.

E-mobility key figures

	31.12.2020	31.12.2021	Change
Number of charging stations installed	31	48	+55%
of which, public charging stations	6	6	–
Charges at public charging stations*	211	512	+243%
Number of own fossil fuel vehicles	2	1	–50%

* For the month of December

Overarching indicators Energy and emissions

Energy consumption and energy intensity

The final energy consumption figures specified in the accounting refer to heating oil and natural gas as well as to the operating current used by the heat pumps

to generate useful energy in the form of hot water and heating for the real estate portfolio of Zug Estates. The accounting also includes mobility-related final energy consumption based on the fuel and electricity required for the company's fleet of vehicles. The following figures relate to the entire Zug Estates portfolio.

GRI 302-1 Energy consumption within the organisation

GRI 302-3 Energy intensity

	Unit	2020	2021
Fuel consumption, non-renewable (heating oil, natural gas, diesel and gasoline)	MWh	1 940	1 218
of which for thermal energy consumption (fossil)	MWh	1 913	1 183
of which for company-owned vehicles (fossil)	MWh	27	35
Fuel consumption, renewable	MWh	0	0
Circulago district heating	MWh	4 646	5 641
Circulago district cooling	MWh	1 751	1 505
Power consumption (general electricity, power for heating, power for e-vehicles, incl. private consumption of photovoltaic power)	MWh	6 933	7 251
of which consumption of power from national sources (hotel, ¾ of operating current)	MWh	5 398	5 658
of which consumption of power from regional sources (¼ of operating current)	MWh	1 535	1 593
of which for general electricity	MWh	4 358	4 381
of which for heating (power for the heat pump's power house)	MWh	2 570	2 867
of which for company-owned electric vehicles	MWh	4	3
Final energy consumption, total	MWh	15 271	15 615
Final energy consumption per m ² of energy reference area ¹	kWh/m ²	61.0	62.4
Final energy consumption per m ² of lettable area ²	kWh/m ²	68.6	70.1

¹ Refers to an energy reference area of 250 409 m².

² Refers to lettable area of 222 641 m²

No conversion tables are used except for heating oil, which is calculated at 10.5 kWh per litre.

The share of renewable energies amounted to 92% in 2021 (previous year: 86%). No natural gas (0%) was used (previous year: 0%).

Photovoltaic power production

	Unit	2020	2021
Power production (PV installations)	MWh	810	1 145
of which PV power for own consumption	MWh	462	489
of which PV power sold (to tenants and fed into the grid)	MWh	348	656

Energy efficiency by building use type

	Unit	2015	2016	2017	2018	2019	2020	2021
Energy efficiency and energy intensity								
Commercial								
Final energy demand	GWh	6.80	7.14	7.03	6.44	6.61	6.37	6.80
Energy reference area	m ²	46 404	46 404	46 404	46 404	46 927	50 001	50 001
Energy demand / energy reference area	kWh/m ²	146.4	153.8	151.5	138.7	140.8	127.5	136.0
Office								
Final energy demand	GWh	2.22	2.47	2.40	2.30	2.46	2.95	2.83
Energy reference area	m ²	30 002	30 002	30 002	37 792	46 787	73 678	73 678
Energy demand / energy reference area	kWh/m ²	74.0	82.2	80.0	61.0	52.7	40.0	38.4
Other								
Final energy demand	GWh	4.25	4.35	4.36	4.41	4.60	4.02	3.78
Energy reference area	m ²	59 555	59 555	59 555	77 534	77 534	77 534	77 534
Energy demand / energy reference area	kWh/m ²	71.3	73.0	73.2	56.9	59.3	51.8	48.7
Other								
Final energy demand	GWh	1.46	1.54	1.53	1.48	1.55	1.63	1.92
Energy reference area	m ²	24 087	24 087	24 087	28 282	29 223	48 321	48 321
Energy demand / energy reference area	kWh/m ²	60.6	64.1	63.6	52.5	53.1	33.8	39.7

This chart includes all types of energy (see the table showing energy intensity on page 22)

Greenhouse gas emissions (GHG emissions)

GRI 305-1 Direct (Scope 1) GHG emissions

GRI 305-2 Energy indirect (Scope 2) GHG emissions

GRI 305-3 Other indirect (Scope 3) GHG emissions

GRI 305-4 GHG emissions intensity

The greenhouse gas emissions include the carbon emissions that account for by far the largest part of the emissions of Zug Estates. The impact of other greenhouse gases such as CH₄, N₂O, HFCs, PFCs, SF₆ and NF₃ is negligible. These emissions were broken down into scopes and calculated on the basis of the Greenhouse Gas Protocol (GHG Protocol).

	Unit	2020	2021
Scope 1: (heating oil, natural gas, diesel and gasoline)	t CO ₂ eq	394	230
Scope 2: (general electricity, electricity for heat, electricity for electric vehicles) ¹	t CO ₂ eq	60	3
Scope 3:	t CO ₂ eq	1 078	1 146
Energy consumption by tenants		1 050	1 125
Commuter mobility (Zug Estates AG)		28	20
Business trips (Zug Estates AG)		n.a.	0.4
Total greenhouse gas emissions (Scopes 1–3)	t CO₂eq	1 532	1 379
Scope 1 and 2 greenhouse gas emissions per m ² of energy reference area ²	kg CO ₂ eq/m ²	1.8	0.9
Scope 1 and 2 greenhouse gas emissions per m ² of lettable area ³	kg CO ₂ eq/m ²	2.0	1.0

¹ Scope 2 emissions are reported using a market-based approach (GHG Protocol; see the emission factors on page x)

² Refers to an energy reference area of 250 409 m².

³ Refers to lettable area of 222 641 m².

Emissions by building use type

	Unit	2015	2016	2017	2018	2019	2020	2021
GHG emissions intensity								
Commercial								
Greenhouse gas emissions	t	632.5	694.2	658.1	558.9	622.5	127.8	95.1
Energy reference area	m ²	46 404	46 404	46 404	46 404	46 927	50 001	50 001
GHG emissions / energy reference area	kg/m ²	13.6	15.0	14.2	12.0	13.3	2.6	1.9
Office								
Greenhouse gas emissions	t	208.5	248.1	227.4	188.7	213.6	14.0	0.1
Energy reference area	m ²	30 002	30 002	30 002	37 792	46 787	73 678	73 678
GHG emissions / energy reference area	kg/m ²	7.0	8.3	7.6	5.0	4.6	0.2	0.0
Other								
Greenhouse gas emissions	t	370.8	385.1	371.8	340.1	362.0	282.0	116.9
Energy reference area	m ²	59 555	59 555	59 555	77 534	77 534	77 534	77 534
GHG emissions / energy reference area	kg/m ²	6.2	6.5	6.2	4.4	4.7	3.6	1.5
Other								
Greenhouse gas emissions	t	109.0	122.1	114.6	97.4	109.6	21.4	8.0
Energy reference area	m ²	24 087	24 087	24 087	28 282	29 223	48 321	48 321
GHG emissions / energy reference area	kg/m ²	4.5	5.1	4.8	3.4	3.7	0.4	0.2



AMSTEIN+WALTHERT

Explanations regarding energy and greenhouse gas accounting

Energy- and water-related data is analysed and prepared by Amstein + Walthert, Zurich.

System boundaries

This accounting covers all properties owned by Zug Estates during the reporting period. Properties that are co-owned (condominiums) were taken into account if the heat was delivered by Zug Estates (contracting). New and refurbished buildings were only taken into account if they were operational for the entire year under review. Properties sold during the period under review were not included. Properties purchased during the period under review will only be included in the subsequent year. The electricity required for the self-used office and hotel spaces of Zug Estates was included in these calculations, as were the heating energy, general electricity and water consumption of the properties in question.

Energy and water-related data is always reported from 1 April to 31 March of the subsequent year. For example, the 2021 reporting year refers to the period from 1 April 2021 to 31 March 2022. Mobility data are collected or estimated annually. Commuter mobility data is collected annually.

The energy reference area (ERA) and lettable area figures are used as reference areas. Energy reference areas were first calculated in 2020 and replace the lettable areas when calculating intensities.

Tenant/landlord interface

Zug Estates always procures the heating energy itself and then passes these costs on to tenants through heating bills, meaning that heating energy is included in full in the calculations. The same applies to electricity in common spaces and for the ventilation and air conditioning of rented spaces. Electricity used by tenants is only accounted for through the greenhouse gas emissions in Scope 3.

Degree of coverage and estimates

The reporting covers all properties currently in operation within the defined organisational boundaries. In the case of properties for which no final invoice from the utilities or measured consumption values were available as at the closing date of the period under review, consumption was estimated on the basis of comparable properties.

Accounting for greenhouse gas emissions

Greenhouse gas emissions are accounted for in accordance with the Greenhouse Gas Protocol (GHG Protocol). Scope 1 comprises the emissions that arise

through the use of fuel oil and natural gas to generate heat as well as from the use of gasoline and diesel in the company's own vehicles. Scope 2 comprises emissions that arise in connection with the generation of purchased electricity as well as the heating and cooling capacity purchased from the Circulago lake water district. Scope 3 comprises emissions generated in connection with commuter mobility, the generation of electricity used by tenants and business trips.

Emission factors

Fuels: BAFU, 2019, CO₂-Emissionsfaktoren des Treibhausgasinventars der Schweiz² (CO₂ Emission Factors of Switzerland's Greenhouse Gas Inventory); Alig, M., Tschümperlin, L., Frischknecht, R., 2017, Treibhausgasemissionen Strom- und Fernwärmemixe Schweiz gemäss GHG Protocol³ (Greenhouse Gas Emissions of Switzerland's Electricity and District Heating Mix in Accordance with the GHG Protocol).

Electricity, district heating/cooling:

Alig, M., Tschümperlin, L., Frischknecht, R., 2017, Treibhausgasemissionen Strom- und Fernwärmemixe Schweiz gemäss GHG Protocol (Greenhouse Gas Emissions of Switzerland's Electricity and District Heating Mix in Accordance with the GHG Protocol).

Company vehicles (fossil) and commuter mobility: Mobitool 2.1⁴

Most important changes made to accounting

- Emissions stemming from the purchase of district heating were accounted for using the contractually agreed distribution of 70% energy from heat pumps and 30% from natural gas (switched to biogas as of 1 January 2022). In the past year, the Metalli 1+2 energy centre was accounted for at 7% natural gas using the actual consumption figures measured.
- The phase 3 Metalli properties, which consist of Industriestrasse 12/13a/13c/18, the Halden-/Metallstrasse residential development and Park-hotel Zug, now have district heating.
- As of 1 January 2022, guarantees of origin for a run-of-river power plant were used as a power origin product for all properties except the hotel business.
- In addition to last year's Scope 3 emissions, emissions related to business travel were also collected and accounted for.

² https://www.bafu.admin.ch/dam/bafu/de/dokumente/klima/fachinfo-daten/CO2_Emissionsfaktoren_THG_Inventar.pdf.download.pdf/CO2_Emissionsfaktoren.pdf

³ https://treeze.ch/fileadmin/user_upload/downloads/Publications/Case_Studies/Energy/619-GHG_Strom_Fernw%C3%A4rme_v3.0.pdf

⁴ <https://www.mobitool.ch/de/tools/mobitool-faktoren-v2-1-25.html>

3.3 Materials

Relevance

A large share of greenhouse gas emissions arises during building construction. We can reduce the amount of grey energy attributable to our buildings and conserve resources by making conscious material choices. The use of materials is relevant to all Zug Estates properties and construction projects. Zug Estates endeavours to plan, build, manage and deconstruct its own buildings in accordance with the basic principle of a circular economy, which also calls for the production of waste to be minimised.

How we address the topic

Zug Estates pursues the following specific goals with respect to the use of construction materials, particularly in its plans for the Metalli Living Space:

- The number of existing buildings to be deconstructed will be minimised. Deconstructed material will be re-used on site whenever possible or recycled.
- Both recyclability and grey energy will be taken into consideration in the choice of materials. If recycled materials are available, they will be prioritised.
- Digital planning, lean management practices including prefabrication and the use of smart connection techniques establish the conditions needed for these materials to be deconstructed and re-used or recycled in the future.

Ambitions related to grey energy

Carbon emissions during the construction phase (grey energy) are to be minimised for new buildings in the project. Grey energy is measured based on kg CO_{2eq}/m² of energy reference area. A material passport and ecobalance must also be prepared. New buildings should report this figure.

Circular economy

New building construction and demolition work should implement circular approaches of the circular economy. This concept is aimed at selecting suitable material compounds and materials that can be reused as fully as possible for new projects once they have reached the end of their usable life. A material's circularity is measured using a Material Circularity Indicator.

To gain some initial experience with a digital material register, Zug Estates joined the Madaster network in August 2022.

Tenant waste

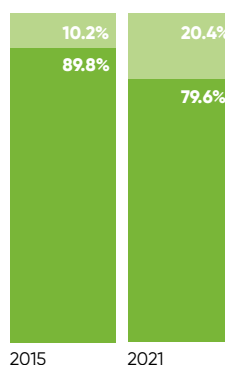
Household rubbish is collected in rubbish bags subject to charge, which can be deposited at several collection points at both sites. The same thing also applies to green waste (compost). Hazardous waste can be disposed of at municipal disposal sites. One of these, Ökihof Zug, is located 500 metres from the Metalli site and another "Ökihof" is situated right next to the Suurstoffi site in Rotkreuz.

Parkhotel Zug is taking steps to combat food waste and is committed to ensuring that food produced for the weekly Sunday brunch is consumed. Uneaten food can be purchased by users of the Too Good To Go app.

Results and evaluation

Wood is highly relevant for Zug Estates as a building material, not only because of its low grey energy rating but also because it binds carbon for its entire useful life, thus keeping it out of the atmosphere. Because of that, we have been relying on wood as a building material for more than ten years and implemented several pioneering projects during that time. We completed our first wooden building in 2010: the City Garden Hotel in Zug. This was followed up in 2014 by nine buildings and 156 apartments – the largest wood construction project in Central Switzerland – at the Suurstoffi site. In 2018 we developed the S22 building, Switzerland's first wooden high-rise. 2019 then brought the Arbo, a 60-meter-tall building that is currently Switzerland's tallest wooden high-rise. Both the S22 and the Arbo are located on the Suurstoffi site.

Percentage of rentable space in wooden buildings as share of overall space



■ Rentable space in wooden buildings
■ Rentable space, conventional

3.4 Water

Relevance

Climate change is making water an increasingly precious resource. Longer, more frequent droughts can even be expected to trigger restrictions in certain regions of Switzerland. Because of that, Zug Estates also intends to use water resources prudently. In the case of drinking water, this includes both direct consumption within the company's own business segments (real estate and hotels & catering) as well as tenants' indirect consumption. The sustainable use of drinking water is factored into considerations throughout the construction planning phase and the company's property management.

How we address the topic

We aim to minimise soil sealing and create water-retaining structures and water storage facilities where needed to curb surface runoff and allow water to seep into the groundwater supply. The meteoric water recovered can be put to good use for watering gardens, for example. That helps us reduce the amount of water we draw from the municipal supply.

We have set ourselves the following goals to ensure that we embrace a sustainable, efficient approach to water management:

- We strive to make ongoing improvements in the area of drinking water consumption. To date, however, no precise target for consumption per square meter of lettable space has been defined.
- We plan to implement at least one meteoric water consumption project per year until 2025.

- To minimise surface runoff, we intend to have all newly planned outdoor spaces landscaped in compliance with the minimum requirements set out by the Stiftung Natur & Wirtschaft (Nature & Economy Foundation; see the section on Biodiversity). Existing spaces are to be restored wherever possible.

We initiate targeted measures in consultation with our Development and Management team in order to reach those goals. To help tenants reduce their water consumption, for example, we not only provide water-efficient appliances and water-saving devices, but also implement water conservation awareness campaigns. Aerators are installed in the showers and taps of all hotel rooms of Hotelbusiness Zug AG.

We have done pioneering work with respect to how we handle meteoric water, particularly in our Aglaya garden high-rise. The building has an underground cistern that collects water from the roof of the residential tower and surrounding buildings. The water is then pumped from the cistern to the various planting troughs on the building's exterior. This use could serve as a model for other new construction projects.

As shown by the Water Risk Atlas published by the World Resources Institute, both Zug Estates sites are in regions with a high level of water availability.⁵ There is no evidence available at present that might indicate water scarcity or insufficient drinking water quality. When developing its sites, Zug Estates focuses on the Zurich – Zug – Lucerne transit axis⁶, which is also uncritical in terms of water availability.

⁵ <https://www.wri.org/applications/aqueduct/water-risk-atlas/>

⁶ <https://zugestates.ch/uber-zug-estates#investment-criteria>

Results and evaluation

GRI 303-1 Interactions with water as a shared resource

See the section entitled "How we address the material topic".

GRI 303-3 Water withdrawal

	Unit	2016	2017	2018	2019	2020	2021
Water withdrawal	m ³	128 095	123 371	144 07	147 057	138 027	131 570
Water intensity	m ³ /m ² LA (lettable area)	0.87	0.84	0.87	0.83	0.62	0.59
Square metres (m ²) of lettable area		146 642	146 979	170 290	181 77	222 641	222 641

Water origin

The water for both sites (100% of the properties) is purchased from two local providers.

Site	Water supplier	Headwater region	Spring	Quantity in m ³ (2021)
Suurstoffi site	Wassergenossenschaft Rotkreuz ⁷	regional	Spring and ground water	61 353
City Centre site/Metalli	WWZ AG, Zug ⁸	regional	Spring and ground water	70 217

100 percent of the properties are connected to the public sewer system.

⁷ <https://wgr-rotkreuz.ch/home.html>

⁸ <https://www.wwz.ch/de/privatpersonen/wasser>

Water efficiency by building use type

	Unit	2015	2016	2017	2018	2019	2020	2021
Efficiency of water use								
Commercial								
Water consumption	m ²	37 921	37 002	36 368	39 250	36 954	28 869	29 748
Energy reference area	m ²	46 404	46 404	46 404	46 404	46 927	50 001	50 001
Water consumption / energy reference area	l/m ²	817.2	797.4	783.7	845.8	787.5	577.4	595.0
Office								
Water consumption	m ²	19 566	19 164	18 538	25 718	25 937	25 480	26 308
Energy reference area	m ²	30 002	30 002	30 002	37 792	46 787	73 678	73 678
Water consumption / energy reference area	l/m ²	652.2	638.8	617.9	680.5	554.4	345.8	357.1
Other								
Water consumption	m ²	50 988	55 523	48 839	58 781	59 917	61 188	56 848
Energy reference area	m ²	59 555	59 555	59 555	77 534	77 534	77 534	77 534
Water consumption / energy reference area	l/m ²	856.1	932.3	820.1	758.1	772.8	789.2	733.2
Other								
Water consumption	m ²	15 581	15 588	15 135	18 422	17 422	18 494	18 505
Energy reference area	m ²	24 087	24 087	24 087	28 282	29 223	48 321	48 321
Water consumption / energy reference area	l/m ²	646.9	647.2	628.3	651.4	596.2	382.7	383.0

This data is always reported from 1 April to 31 March of the subsequent year.

4. Social topics

4.1 Attractive working environment

Relevance

Employees are a pivotal element for the targeted business development and economic success of Zug Estates. With that in mind, creating an attractive working environment is important to us. One where employees are empowered to contribute toward the achievement of our corporate goals while also having an opportunity to further their own personal development. We create competitive working conditions and meaningful tasks to attract the very best candidates.

How we address the topic

Under the leadership of the Human Resources department, we have set ourselves specific targets to help us improve with respect to all these criteria. One example of this is our goal of keeping our annual turnover rate low in the interest of retaining expertise; we also want a steady inflow new input from outside the company. We report the turnover rate on a monthly basis and can respond swiftly if any action becomes necessary. Overtime and unused leave entitlements are reviewed regularly by the HR department in order to identify work overloads at an early stage and prevent related absences. Both the turnover rate as well as the overtime and unused leave entitlements are included in the standard reports of the monthly Group management meetings of Zug Estates AG.

GRI 102-41: Employees' terms of employment differ from one Group company to the next. There are not any collective labour agreements in place for employees of Zug Estates AG. 78 of the 85 employees (91.8%) of Hotelbusiness Zug AG are subject to the national collective labour agreement (N-CLA) for the hospitality industry. All in all, 56.5% of employees work under a collective labour agreement.

The documents Employment Policy, Personnel Policy (incl. the Code of Conduct), Securities and Insider Trading Policy, Policy on Handling Gifts and Invitations (Anti-corruption) and the Directive on the Protection of Personal Data (Discrimination) were revised for Zug Estates AG in autumn 2021. 100% of the employees have confirmed with their signature that they have read and understood the documents. This process also applies to new hires. The Personnel Policy and the Employment Policy for Hotelbusiness Zug AG will be reviewed in the second half of 2022.

Zug Estates AG participated in an external comparison of wages in 2021. This comparison revealed that

the company pays wages that are appropriate for the industry.

Training and Education

Employee training and education helps ensure that our employees' expertise is always up to date. Our goal is for all employees to spend an average of two days per calendar year on training and education. Training and education measures are planned during the annual performance appraisal. We would like to see all employees meet with their line manager for a performance appraisal at least once a year. Human Resources checks whether these appraisals and further education measures have taken place and documents them.

The brown bag format has become an established format for informal exchanges of information. Whether online or on site, interested employees can learn more about specific topics or take part in discussions. Participation is optional.

Zug Estates is involved in external training programmes and either covers a portion of the course fees or awards time off or leave entitlements.

The Zug Estates Group is committed to vocational training and offers apprenticeships to school graduates every year. As at 31 December 2021, seven apprentices were employed by the Group (previous year: nine).

Diversity and Equal Opportunity

In the area of diversity, our goal is to increase the proportion of women in management and senior management positions to achieve a balanced gender ratio at all hierarchical levels in the medium term. One way in which we contribute to these efforts is by offering part-time models and flexible working hours (annual flextime model). Finding suitable candidates is difficult at the senior management level and in Group management, in particular, partly due to the nature of the industry. Because of that, Zug Estates plans to focus more strongly on internal promotion in future.

No job seekers are denied on the basis of their age, gender, identity or nationality. During the application process, we attach great importance to ensuring the diversity described above all the way to the last round of interviews. In the end, the job will be offered to the person who best meets the requirements (with respect to specialist and industry knowledge, personality, etc.).

We offer equal pay for equal work. Employee experience is also factored into this calculation.

Protection of personal data and complaints process

All employees of the Zug Estates Group are entitled to have their personal integrity protected at work (regarding their age, ethnicity, disability, religion, gender, sexual orientation, etc.). Violations of personal integrity negatively impact employees' well-being as well as collaboration within the company, which is why they are not tolerated within the Zug Estates Group. Any and all conduct that results in a violation of personal integrity is considered unacceptable. This specifically includes all kinds of discrimination, sexual harassment, bullying and exploitation. The corresponding Directive on the Protection of Personal Data was revised in November 2021.

Any measures taken to safeguard employees' personal integrity always apply to temporary and external staff as well as to partners and suppliers.

If employees, who feel like they are being sexually harassed, bullied, discriminated against or treated in any other way that is unacceptable, are unable to resolve the problem bilaterally, they can contact their direct line manager, Human Resources or the chair of the Nomination and Compensation Committee of Zug Estates Holding AG. Alternatively, employees may contact the external ombudsman (Reichenbach Rechtsanwälte AG, Zurich). Their anonymity is guaranteed. The entire complaints process as well as the respective contact details are described in the Directive on the Protection of Personal Data. As was already the case in 2020, there were no cases reported in 2021.

Terms of employment

The employment contract defines weekly working hours as annual working hours for all employees of Zug Estates AG. The settlement period for annual working hours is defined as a whole year. Daily working hours are also flexible. The combination between an annual number of working hours and flexitime is intended to maximise flexibility with respect to scheduling while also factoring in market conditions that fluctuate over the course of the year and the operational requirements of Zug Estates, taking employees' interests into consideration.

The annual working time model is set up so that employees can take time off, even at short notice, if there are emergencies in the family or if they have urgent personal matters to attend to. Otherwise, brief ab-

sences for personal reasons should be planned for the start or end of their scheduled working hours (non-core hours).

All employees of Zug Estates AG with a full workload have the option of working from home for no more than two days per week. For those with smaller workloads, the employee's line manager will decide whether working from home is a possibility and if so, what share of the work may be performed from home. The general conditions and requirements are set forth in the Work from Home Policy. The commuter mobility analysis revealed that employees spent around 20% of their days working from home in 2021.

There is no general entitlement to having unpaid leave granted. In consultation with Group management, however, unpaid leave (short-term or long-term) may be granted if the operational circumstances permit. The precise terms of such leave must be discussed with the HR Director. No requests for unpaid leave were submitted in 2021. One request was submitted and approved in 2020.

A part-time workload is possible in all areas and hierarchical levels of Zug Estates. In principle, there is enough flexibility for employees to work a 60% workload over the course of three days or for the number of hours worked per day to be reduced. As at 31 December 2021, 22.6% of all employees (women: 52.6 %, men: 5.8%) at Zug Estates AG have a part-time workload. Across the entire Group, 32% of employees have a part-time workload.

Changes in workload (increases or reductions) are possible to the extent permitted by operational requirements. Employees must request these through their line managers and the requests must be approved by Group management. 100% of the requests were approved in 2021.

Health

Zug Estates attaches great importance to the health of its employees; one example of how it promotes employees' health is by creating a working environment that lives up to this claim through employee-friendly employment conditions.

The rate of sickness at the Zug Estates Group declined from 5.34% to 3.78% year on year. The accident-related absence rate dropped from 0.69% to 0.17%. This calculation is based on the sum of all target hours for the entire workforce as stipulated in the employment contracts.

A company-organised running group encourages exercise among the employees and boosts their sense of solidarity within the Group.

Results and evaluation

We conduct surveys every two years to measure employee satisfaction. The most recent employee survey was conducted by Great Place to Work (GPTW) in November/December 2021. Based on the positive responses, both Zug Estates AG and Hotelbusiness Zug AG were certified by Great Place to Work in February 2022. The results were presented, evaluated and discussed at several senior management and employee workshops. Measures are currently being defined to address employees' most important concerns.

The response rate was 88% for Zug Estates AG and 75% for Hotelbusiness Zug AG. Both results imply a high level of engagement and interest. The management culture was rated positively at Zug Estates AG, which

attests to management's high availability and willingness to provide information. Employees appreciate the fair treatment, team spirit and a sincere interest in them as individuals. Optimisation potential exists with respect to cross-departmental collaboration and the infrastructure found at workstations. A standing desk model is currently being evaluated, that is to be adopted throughout the company. Employees of Hotelbusiness Zug AG appreciate the fair treatment they experience regardless of gender, ethnic origin or nationality, as well as the good integration of new employees. There is room for improvement with respect to the employee remuneration system as well as support for further education.

GRI 102-8 Information on employees and other workers

All employees work in the Canton of Zug. The figures indicated the number of people (not full-time equivalents). All figures as at 31 December.

Employees by function

	31.12.2020				31.12.2021		
	Real estate	Hotel & catering	Group		Real estate	Hotel & catering	Group
Women, extended Group management	0	0	0		0	0	0
Men, extended Group management	4	1	5		5	1	5
Women, senior management	5	5	10		5	4	9
Men, senior management	18	8	26		14	9	23
Women, employees	14	36	50		13	41	54
Men, employees	13	33	46		15	24	39
Women in training	2	5	7		1	4	5
Men in training	0	2	2		0	2	2
Total	56	90	146		53	85	138

Employees by employment contract

	31.12.2020				31.12.2021		
	Real estate	Hotel & catering	Group		Real estate	Hotel & catering	Group
Women, unlimited	21	41	62		19	44	63
Women, limited	0	5	5		0	5	5
Men, unlimited	35	42	77		34	34	68
Men, limited	0	2	2		0	2	2
Total	56	90	146		53	85	138

Full-time/part-time employees

	31.12.2020				31.12.2021		
	Real estate	Hotel & catering	Group		Real estate	Hotel & catering	Group
Women, >90%	11	19	30		9	19	28
Men, >90%	32	40	72		32	33	65
Women, 50–90%	9	20	29		9	24	33
Men, 50–90%	2	2	4		1	0	1
Women, <50%	1	7	8		1	6	7
Men, <50%	1	2	3		1	3	4
Total	56	90	146		53	85	138

GRI 401-1 New employee hires and employee turnover

	31.12.2020				31.12.2021		
	Real estate	Hotel & catering	Group		Real estate	Hotel & catering	Group
New hires during the year under review (number)	9	14	23		14	17	31
New hire rate	16%	16%			28%	19%	
Departures during the year under review (number)	1	27	31		17	14	31
Turnover rate	7%	27%			32%	17%	

The turnover rate accounts for all departures of permanent employees (not including temporary employment contracts) and is expressed as a ratio of the average headcount for the period, which corresponds to the mean number of employees at the start of the period and at the end of the period.

There have not been any mass redundancies at the Zug Estates Group in the past three years.

GRI 401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees

Zug Estates attaches great importance to the equal treatment of all its employees. Accordingly, all benefits are also provided to both temporary and part-time employees.

Zug Estates AG offers several fringe benefits. These include commuter allowances of up to CHF 2500, a mobile phone with a subscription for personal and business use as well as service anniversary gifts, for example. Several employee events are also held every year.

Zug Estates AG has decided to adopt a number of measures that exceed the minimum prescribed by law:

- For example, Zug Estates AG has taken out additional insurance that supplements the statutory benefits in accordance with the UVG (Accident Insurance Act). Under this policy, 80% of the portion of the salary that exceeds the salary insured under UVG is insured for a period of two years from the date of the accident.
- In the event that an employee is unable to work through no fault of their own as a result of accident or illness, they are entitled to 100% of their net salary. This benefit is available for a period of between one and six months depending on the number of years of service.
- Maternity leave: After giving birth, female employees are entitled to daily allowances in the amount of 100% of their salary (excl. bonuses/gratuities) for a period of 16 weeks.
- Paternity leave: We continue to pay 100% of fathers' salaries during the two-week paternity leave stipulated by law

GRI 403-9 Work-related injuries

	31.12.2020				31.12.2021		
	Real estate	Hotel & catering	Group		Real estate	Hotel & catering	Group
Fatal occupational accidents	0	0	0		0	0	0
Fatal occupational accidents involving suppliers	0	0	0		0	0	0

Zug Estates is not aware of any fatal occupational accidents that have occurred in connection with our business activities in the past two years.

GRI 404-1 Average hours of training per year per employee

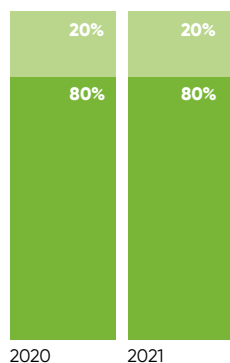
	31.12.2020				31.12.2021		
	Real estate	Hotel & catering	Group		Real estate	Hotel & catering	Group
Average number	28.8	1.1	11.8		10.9	0.8	4.7
per woman	25.9	0.6	8.5		21.5	0.0	6.0
per man	30.6	1.7	14.5		5.0	2.0	3.5
per employee in a leadership role	25.1	5.3	18.3		0.5	0.3	0.4
per employee not in a leadership role	34.8	0.4	10.1		20.3	1.0	6.8

GRI 404-3 Percentage of employees receiving regular performance and career development reviews

During the year under review (2021), we conducted performance and career development reviews with 100% of employees, regardless of gender, function or employment contract.

GRI 405-1 Diversity of governance bodies and employees

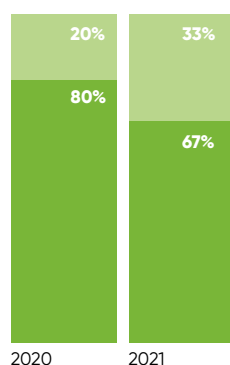
Board of directors Zug Estates Holding¹



■ Women ■ Men

¹ All members of the board of directors are 50 years of age or older.

Extended Group management by age group¹

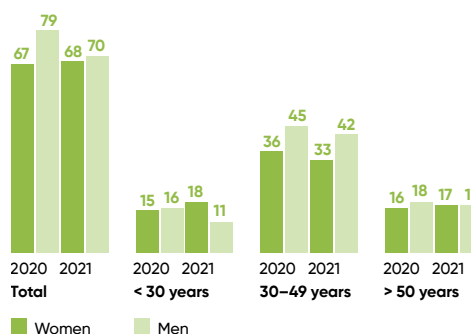


■ > 50 years ■ 30-49 years

A change was made in the extended Group management of the Zug Estates Group on 1 February 2022. This governing body once again includes a woman with the arrival of Irene Ganwisch, the new hotel director. The current governance structure¹ can be found on the Zug Estates website.

¹ <https://zugestates.ch/uber-zug-estates#governance-structure>

Employees by gender and age group (with and without a leadership role)



GRI 405-2 Ratio of basic salary and remuneration of women to men

To prevent wage discrimination, Zug Estates conducted a wage equality analysis for the first time in 2020 using Logib, a tool provided by the federal government. This analysis did not reveal any significant gender-specific differences in wages. Since all employees work in the Canton of Zug, it was possible to cover all of them through one analysis. The analysis will be updated regularly in the future to guarantee that fair wages are paid to all employees at all times.

GRI 406-1 Incidents of discrimination and corrective actions taken

	31.12.2020			31.12.2021		
	Real estate	Hotel & catering	Group	Real estate	Hotel & catering	Group
Complaints lodged	0	0	0	0	0	0
Cases punished	0	0	0	0	0	0

Discrimination, harassment and exploitation of any kind are not tolerated. The Directive on the Protection of Personal Data and the Code of Conduct (<https://zugestates.ch/corporate-governance>) define clear specifications and guidelines. There is a complaints process in place for reporting cases of discrimination (see page 31).

4.2 Development of living spaces

Relevance

The integral development and sustainable operation of sites and neighbourhoods to create attractive and sustainable living environments for users and tenants is at the heart of our business operations.

How we address the topic

We achieve this by attaching great importance to the following four factors in all our construction activities:

- By implementing a targeted mix of uses featuring ground-floor businesses with public appeal, we design our sites to be diverse and attractive living environments that allow people to meet many of their daily needs within walking distance.
- By creating exceptional outdoor spaces designed to enable a wide variety of encounters, we can offer visitors more pleasant experiences and promote the attractiveness of our sites. We do this by providing gardens, a diverse range of spaces that can be used for leisure, exercise and playing as well as strategically positioned bodies of water.
- We anticipate tenants' and customers' future needs and ensure that we can respond swiftly to changing requirements by providing flexible, mixed-use buildings. We use feedback and complaints received from tenants and customers as a way of continuously improving customer satisfaction and the quality of our services.
- High-quality buildings allow us to meet the needs of tenants over the long term. That also includes being able to adapt the buildings to changing climatic conditions to ensure tenants' and users' comfort and well-being.

These are the goals pursued by the Head of Development and Construction Projects together with their team and external partners. Competitions with expert juries also ensure the quality of the planning work. Our aim is to continuously improve the liveability and sustainability of our sites so we can achieve our ultimate goal of providing high-quality living environments for different segments of the population. For Zug Estates,

ensuring variety is one pivotal element of creating attractive living environments.

Workshops were conducted together with the landscape architects in charge and the current groundsperson to refine the outdoor landscape design and ensure that visitors will have pleasant experiences at the Suurstoffi site. Within the scope of these efforts, some important topics include biodiversity, ecological diversity, indigenous plants, optimised care, visually appealing design and potential uses for residents.

Results and evaluation

The Suurstoffi site has 74 affordable rooms for students. This number is to increase to 96 rooms once work at the site has been completed.

160 apartments at the Suurstoffi site can be used as assisted living facilities for the elderly. In addition to a large selection of services (including housekeeping, ironing and laundry services), residents can also book other options including a 24/7 telephone and emergency hotline, alerts to blue light organisations and the technical monitoring of emergency alert devices.

Metalli Living Space

The Metalli Living Space (www.lebensraum-metalli.ch) project will give rise to some 100 new city apartments in the centre of Zug. The apartment layouts meet the different needs of a modern, urban society. The mix also includes apartments in the affordable segment.

Mobility

The Metalli complex and the Suurstoffi site are traffic-free. Both Zug Estates sites are connected to public transit to the greatest extent possible. All tenants can reach a train station, whether in Zug or Rotkreuz, within 10 minutes. Both train stations offer regular direct trains to Lucerne and Zurich as well as connections to other destinations in the region.

The Metalli/Bahnhof Zug bus stop is served by seven bus lines operated by Zugerland Verkehrsbetriebe. At the Rotkreuz station, six bus lines provide access to the region.

Zug Estates contributed CHF 2.0 million to help finance the footbridge at the Rotkreuz station to connect the Suurstoffi site directly to the train station. The footbridge was officially opened to the public in autumn 2019.

Accessibility by public transport is also a relevant criterion when deciding whether to acquire new sites.

E-mobility

Zug Estates actively promotes e-mobility. All tenants of Zug Estates are offered an opportunity to obtain an e-parking spot, for example. See page 22 for more information about mobility.

The public e-vehicle charging stations at both sites are being expanded on an ongoing basis. There were six charging stations, two of which rapid charging stations, at the Metalli/City Centre site as at 31 December 2021. An expansion is currently being planned and is still expected to be completed sometime in 2022. The Suurstoffi site has had two public charging stations since early August 2022, one of which is a rapid charging station.

Mobility as a Service (MaaS)

By supporting the Sorglos mobil (Carefree Mobility) project from PostAuto AG and Mobility Genossenschaft at the Suurstoffi site, Zug Estates is offering its support to a pilot project in the area of Mobility as a Service (MaaS). Sorglos mobil gives tenants access to a fleet of e-vehicles – including bikes, cars and cargo bikes – right on their doorstep. Booking trips on public transit is also easy to do.

Two Mobility locations are in operation at the Suurstoffi site. Mobility will also set up its first car sharing location at the City Centre site in September 2022. The offer is also open to employees.

Bike parking

Many more bike parking spaces will be created in connection with the Metalli Living Space development project in the centre of Zug.

User satisfaction

We conduct satisfaction surveys and calculate vacancy rates on a regular basis to validate the success of our approach. Going forward, visitor frequency and dwell time measurements for areas on the ground floor will offer additional feedback on our sites' attractiveness.

We conduct surveys on a regular basis to collect information regarding tenant and user satisfaction and base further improvement measures on the insights they deliver. The most recent survey was conducted among the residential tenants of the Suurstoffi site in 2019. It revealed that two of main reasons behind tenants' decision to move to the site were its excellent location and the appealing floor plans.

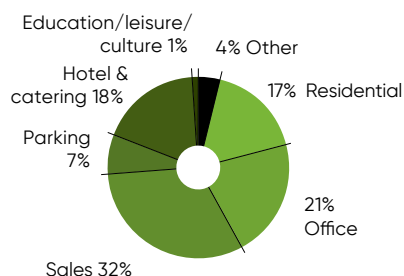
A tenant survey was conducted at the Suurstoffi site in April 2022 as part of a student research project. This survey revealed that 61% of tenants feel extremely comfortable and another 39% feel comfortable at the Suurstoffi site. The responses "uncomfortable" or "very uncomfortable" were not chosen by any respondents.

Some respondents indicated that aspects such as the building's energy efficiency or landscape design also played a role. The availability of parking was identified as being most in need of improvement and the last underground car park was integrated into the pooling system in July 2020 to help alleviate the parking situation. A parking guidance system also went online at the Suurstoffi site. This system helps drivers find empty spaces straight away and greatly reduces the amount of traffic caused by people looking for space to park.

Mix of uses

Use of the Metalli/City Center site

Based on projected rental income^{1,2} as at 31 December 2021

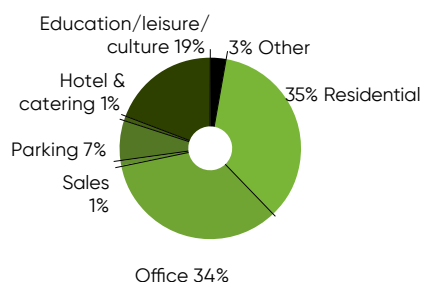


¹ Due proportion of market value and projected rental revenue for (co-owned) property at Baarerstrasse 20–22, Zug

² From point of view of real estate business unit

Suurstoffi site, Risch Rotkreuz

Based on projected rental revenue as at 31 December 2021



4.3 Interconnected communities

Relevance

Zug Estates has set itself the goal of actively promoting interconnectedness and an exchange of knowledge. That includes both creating a network among our tenants and users as well as facilitating communication between industry players.

When it comes to tenants and users, we focus on interactions at our sites to strengthen the sense of identity with the neighbourhood and the site's integration into the community. Our clear utilisation concept and active tenant management also enable us to establish an appealing tenant mix that attracts other tenants and invigorates the sites.

How we address the topic

Neighbourhood events are held on our sites on a regular basis, two of which being an open house and Christmas tree sale. Urban gardening groups also offer opportunities for people to come together. We

use digitalisation as a way of connecting residents more closely with one another: tenants and users of the Suurstoffi site feel more closely connected to their neighbourhood thanks to our tenant app. At the end of the 2021 reporting year, at least one person had the app installed in 76% (previous year: 66%) of the apartments at the Suurstoffi site. We aim to boost this figure even further going forward.

In addition to connecting tenants and users, we support the exchange of knowledge in the real estate industry. Zug Estates has been a role model in the area of sustainable real estate development for many years now and has helped raise awareness among various industry players. An annual sustainability forum promotes the exchange of knowledge in the real estate management industry. What's more, our employees use both teaching work and industry events as opportunities to more firmly incorporate sustainability approaches within the industry.²

Zug Estates also participates in the exchange of knowledge within the sector and between the realms of science and industry by supporting Switzerland Innovation Park Central, which has its premises on the Suurstoffi site. Zug Estates is a core member of the Innovation Park and collaborates closely with the Innovation Park and other members on a variety of research projects.

For several years now, Zug Estates has been a sponsor of the Swiss Building Forum (Schweizer Bauforum), which has become a popular industry event. It is organised by the Lucerne University of Applied Sciences and Arts in collaboration with the Sustainable Construction Network Switzerland (NNBS).

Results and evaluation

Zug Estates facilitates and promotes an exchange of information in the education system. The number of hours spent by employees of Zug Estates AG to further that goal in 2021 is as follows:

- Collaboration on research projects with participation by colleges or universities: 135 hrs
- Supervision of students' work (bachelor's and master's theses): 32 hrs

Two employees of Zug Estates teach at vocational schools and universities.

² www.zugesatates.ch/nachhaltigkeitsforum

5. Governance topics

5.1 Cooperative partnerships

Relevance

Since cooperative partnerships help us get our stakeholders involved in goal-setting processes and identify potential problems at an early stage, we promote cooperative partnerships at every level: with suppliers and service providers, with the authorities, residents, our shareholders and the general public on real estate development projects, and with the tenants of existing properties. Collaboration is based on cooperative, long-term relationships. Reliability is also one of our main priorities and helps us create trust among our partners.

Our partnership with suppliers and service providers hinges not only on high quality and appropriate value for money, but also on whether we have a shared understanding of environmental, social and ethical issues. When awarding our contracts, we always value compliance with sustainability requirements, local ties, a focus on quality and reliable cooperation.

How we address the topic

We have set up several different processes aimed at ensuring ongoing stakeholder involvement, with one of those being the annual sustainability forum. We conduct periodic surveys to assess tenant and user satisfaction. When working on real estate development projects, we attach great importance to ensuring that the concerns of the various stakeholder groups are taken into consideration. The Metalli Living Space redevelopment project illustrates this approach (see GRI 413-1).

Collaboration with our partners Switzerland Innovation Park Central and Spaces (co-working) puts Zug Estates in a position to offer the companies at the Suurstoffi site a diverse variety of different options when renting office space. The concept that was devised jointly in 2022 calls for companies, from start-ups to large corporations, to flexibly be able to rent space, reduce the space rented and purchase services.

Zug Estates places great importance on cooperative partnerships with its existing tenants, as well. One example of this is that Zug Estates has always passed on any reductions to the benchmark interest rate of the past few years to its tenants without being asked to do so.

Results and evaluation

GRI 204-1 Proportion of spending on local suppliers

Zug Estates makes an effort to do business with local and regional suppliers whenever possible. This not only helps strengthen Switzerland as a place of business, but also reduces greenhouse gas emissions caused by long transit routes. Some 1.08% of our investments were in foreign currencies or in foreign countries in the 2021 reporting year, which clearly illustrates that nearly all our business is conducted in Switzerland and only a fraction of our investments flow into other countries.

GRI 413-1 Operations with local community engagement, impact assessments, and development programmes

In connection with the Metalli Living Space development project, we promote dialogue with the public through exhibits, publications and a project website (www.lebensraum-metalli.ch) that are geared toward specific phases of the project. A two-week exhibit in the Metalli shopping mall presented the area's development over time while simultaneously raising the question of which functions the space should serve going forward. A large number of people with an interest in the matter took this opportunity to actively participate in the process through one-on-one talks with representatives of the project team, leaflets or via the website. The findings of those measures are then incorporated into the planning process on an ongoing basis. These efforts help us better align the site's development with the overall development of the City of Zug and gear it toward the needs of both its users and the local population.

*GRI 102-43 Approach to stakeholder engagement**GRI 102-44 Key topics and concerns raised*

Main target group	Frequency of contact	Type of contact	Group's most important concerns
Shareholders and investors	Regularly	<ul style="list-style-type: none"> – General meeting of shareholders – Reporting – Press release – Website – Webcast 	<ul style="list-style-type: none"> – Secure investment – Attractive share price performance – Stable payout ratio – Rights of co-determination – Responsible corporate governance
Analysts	Regularly	<ul style="list-style-type: none"> – Reporting – Roadshows – E-mail/phone – Sustainability forum – Property tour 	<ul style="list-style-type: none"> – Complete, transparent reporting – Company's development potential – Insight into the corporate strategy – Responsible corporate governance
Tenants	As needed	<ul style="list-style-type: none"> – Tenant app (Suurstoffi) – Letter/postings – E-mail/phone – Website 	<ul style="list-style-type: none"> – Information about changes – Simple contact – Swift processing of enquiries – Simple, transparent billing
Media	As needed	<ul style="list-style-type: none"> – Press releases – E-mail/phone 	<ul style="list-style-type: none"> – News about construction projects – Short response times – Newsworthy reports
Employees	Frequently	<ul style="list-style-type: none"> – Events – E-mail – Surveys – Monthly informational event (physical or online) – Intranet 	<ul style="list-style-type: none"> – Further development opportunities – Open, transparent communication – Innovative, sustainable employer – Flexible, autonomous organisation of working time – Open and personal corporate culture
Public and population of Zug	As needed	<ul style="list-style-type: none"> – Exhibitions (Metalli) – Website – Social media 	<ul style="list-style-type: none"> – Living environments that offer added value for the general public – Right to a say/participation in construction projects – Regular updates on progress/status of planning
Authorities and politicians	Regularly	<ul style="list-style-type: none"> – Sustainability forum – Meetings – E-mail/phone/post 	<ul style="list-style-type: none"> – Cooperative partnership in the context of further development – Urban development in line with Zug's cityscape – Public involvement on construction projects (participation) – Bring different interests together
Business partners and suppliers	As needed	<ul style="list-style-type: none"> – Sustainability forum – E-mail/phone 	<ul style="list-style-type: none"> – Long-term collaboration at financially attractive terms and conditions

5.2 Transparent communication

Relevance

Transparent communication helps us strengthen the trust of our stakeholder groups and safeguard the credibility of Zug Estates. Our basic principles of transparent communication are to be applied throughout the entire company: relevance, timeliness and completeness. We communicate transparently by sending clear messages that are appropriate for the various target groups and levels and by employing a variety of different communication channels. We pursue an open communication strategy that ensures all target groups are treated equally.

How we address the topic

When communicating with investors, we adhere to the rules of SIX Swiss Exchange. To that end, Zug Estates prepared a policy governing publication obligations and the disclosure of management transactions. Zug Estates additionally publishes a sustainability report once a year in accordance with the internationally recognised GRI Standards. We communicate with ESG rating companies on a regular basis in that context.

We stay in touch with our tenants through our property management activities and also inform them of any changes in a timely manner via our website, postings or directly via e-mail or letter. At the Suurstoffi site, we also operate a tenant app to simplify communication with tenants. We continuously evaluate ways of expanding digital communications with tenants even further.

Our employees have the opportunity to rate our internal communications within the scope of employee surveys conducted every two years. We aim for a rating of good to very good in those surveys. Since 2020, we have been conducting monthly informational events for our staff, where representatives of Group management or senior management provide employees with updates on the latest developments. Our goal is to hold at least ten such events (either on site or online) per business unit every year. This goal was reached in the 2021 reporting period.

Green bond report

Zug Estates placed two green bonds. The specifications of the green bond require Zug Estates to prepare regular reports, not only containing descriptions of how the funds are used but also about the impact of these funds on nature and the environment. Key figures are prepared and analysed by Amstein + Walthert AG, Zurich. The reports¹ can be found on the Zug Estates website.

Results and evaluation

GRI 201-4 Financial assistance received from government

We received TCHF 744 in short-time working compensation for our hotels in 2021 in connection with the COVID-19 pandemic (previous year: TCHF 1 311). Hotelbusiness Zug AG received hardship assistance from the federal government in the amount of TCHF 2100 (previous year: no contributions). We additionally receive non-recurring remuneration from the federal government for investments in our photovoltaic systems. The non-recurring remuneration amounted to TCHF 144 in 2021 (previous year: none).

GRI 415-1 Political contributions

We did not make or receive any political contributions during the year under review.

5.3 Responsible corporate governance

Relevance

For Zug Estates, responsible corporate governance develops through adherence to our corporate principles and values. Putting long-term profitability ahead of short-term profit seeking is a part of that. Integrity, compliance and ethics are pivotally important to us. It goes to follow that we condemn all forms of corruption and do not tolerate violations of regulatory requirements, breaches of data protection and confidentiality or violations of personal integrity, such as through sexual harassment.

¹ <https://zugestates.ch/stories/green-bond-reporting>

How we address the topic

Policy on Handling Gifts and Invitations (Anti-corruption)

One measure enacted in an effort to prevent corruption is a clear policy on how to handle gifts and invitations (Policy on Handling Gifts and Invitations (Anti-corruption)). This policy is summarised in the chart below:

Gifts	Invitations
Promotional and courtesy gifts of a lower or reasonable value (< CHF 200)	Business meals and similar invitations of reasonable value (< CHF 200)
Higher-value gifts (> CHF 200)	Invitations with entertainment content Costly business meals Invitations that include personal guests
Luxury gifts Cash/similar benefits Gifts to loved ones (life partner, children, etc.)	Extravagant invitations

■ No approval required
■ Approval from compliance officer required
■ Not allowed

The CHF 200 mentioned in the chart should be understood as the amount per recipient and year.

The employees of the Zug Estates Group are obliged to report every known, attempted or successful violation of the rules set forth in these guidelines with respect to gifts both to and from third parties.

Employees of the Zug Estates Group must report even suspected violations. These reports will be treated anonymously on request. The person submitting a justified report will not be penalised in any way.

The following reporting offices are available within the Zug Estates Group:

- Direct or next line manager
- Compliance officer
- Chair of the Audit Committee of Zug Estates Holding AG.

Furthermore, Reichenbach Rechtsanwälte AG functions as an external reporting office for Zug Estates Holding AG.

Code of Conduct

We communicate the corporate values and principles of responsible corporate governance clearly and in an easy-to-understand way to our employees through our Code of Conduct². It forms an integral part of all employment contracts and the employees of Zug Estates are notified of any changes made. The Code of Conduct can be accessed centrally and by anyone through an internal knowledge base. There is both internal offices as well as an external office (law firm) that employees may contact in the case of (suspected) violations. Each complaint is treated confidentially and investigated. Any type of retaliation against employees who report incidents in good faith is prohibited. The offices responsible for handling those complaints will protect the rights of the person accused, as well. See page 36 for more information about the complaints process.

Expenses

Board of directors, Group management and employees shall be reimbursed for all business-related expenses. Depending on their specific level of management, members of Group management and senior management are not permitted to pass on small expenses up to a certain limit but will, in return, be reimbursed by means of a monthly lump-sum amount for expenses as stipulated in the regulations.

Expenses incurred will only be reimbursed upon submission of a corresponding proof of purchase and stating the reason for the expense. The direct line manager and the person responsible at Human Resources shall check each expense claim prior to payment to ensure that it is business-related and in compliance with the policies of Zug Estates and legal provisions. Expenses incurred by the CEO will be approved by the chairman of the board of directors. Additionally, payments to the BoD, Group management and employees are subject to spot checks during the annual audit by the external

² <https://zugestates.ch/corporate-governance>

auditor. The expenses regulations were reviewed and approved by the Tax Administration of the Canton of Zug.

Insider trading

Insider information refers to confidential information whose disclosure would significantly affect the prices of securities admitted to trading (Art. 2j FinMIA). Information has a significant impact on the price of securities if it is likely that an investor would take such information into account when making an investment decision (to purchase, sell or hold corresponding securities) if they had knowledge of it.

The members of the board of directors, the company's Group management and subsidiaries of Zug Estates Holding as well as other employees of Zug Estates have knowledge of insider information. The Securities and Insider Trading Policy prohibits insider trading, describes the duty of confidentiality and lists potential sanctions in the event of violations. The policy defines blackout periods for shares that are published in the corporate governance report (Annual Report 2021, p. 35).

Companies that have access to confidential information by virtue of their activities with Zug Estates may be considered insiders within the meaning of the Financial Market Infrastructure Act (FinMIA). Zug Estates uses a non-disclosure agreement to govern how confidential information should be handled with external partners.

Results and evaluation

GRI 201-2 Financial implications and other risks and opportunities due to climate change

The financial consequences of climate change and other risks related to climate change (see p. 16) form part of the risk report prepared by the board of directors and management on an annual basis. Those consequences are factored into our site development plans – both with respect to the architecture and fit-out of our buildings as well as the way we design the outdoor spaces.

GRI 205-3 Confirmed incidents of corruption and actions taken

None.

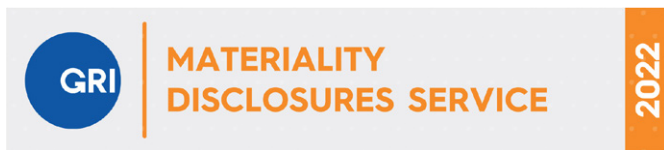
GRI 307-1 Non-compliance with environmental laws and regulations

None.

GRI 419-1 Non-compliance with laws and regulations in the social and economic area

None.

6. GRI Content Index



For the Materiality Disclosures service, the GRI Service team verified that the GRI Content Index is clearly presented and that the references for disclosures 102-40 to 102-49 are consistent with the corresponding sections of the report. The GRI Materiality Disclosures service was used for the German version of the report.

		Disclosure/page
Universal standards		
GRI 101:	Foundation 2016	
GRI 102:	General disclosures 2016	
	Organisational profile	
102-1	Name of the organisation	Zug Estates Holding AG
102-2	Activities, brands, products, and services	p. 8
102-3	Location of headquarters	Industriestrasse 12, CH-6300 Zug
102-4	Location of operations	p. 8
102-5	Ownership and legal form	See Annual Report 2021, p. 61
		Zug Estates Holding AG is listed on the SIX Swiss Exchange, Zurich (ticker symbol: ZUGN, securities number: 14 805 212).
102-6	Markets served	p. 8
102-7	Scale of the organisation	p. 8
102-8	Information on employees and other workers	pp. 32–33
102-9	Supply chain	p. 8
102-10	Significant changes to the organisation and its supply chain	None
102-11	Precautionary principle or approach	See Annual Report 2021, p. 31
102-12	External initiatives	Zug Estates Holding AG is fully committed to the goals of the Paris Agreement and the Energy Strategy 2050 adopted by the Federal Council.
102-13	Membership of associations	Zug Estates Holding AG and its subsidiaries are members of various associations and interest groups: Berufsbildungsfonds Schweiz, ERFA Elektro Industrie Zentralschweiz, Gewerbeverein der Stadt Zug, Gewerbeverein der Risch Rotkreuz, Hauseigentümerverband Zugerland, Hotelierverein Zugerland, Hotellerie Suisse, Interessengemeinschaft Metalli, Madaster Switzerland, Organisation kaufmännische Grundbildung Treuhand/Immobilien (OKGT), Swiss Tourism Federation, SIX Verband der Immobilienwirtschaft (SVIT) Zentralschweiz, Swiss Circle, Swiss Council Community (SCC), Innovation Park Association Central Switzerland, Zug International Business Forum (ZIBF), Zug Tourism, Zug Chamber of Commerce

Strategy		
102-14	Statement from senior decision-maker	p. 3
Ethics and integrity		
102-16	Values, principles, standards, and norms of behaviour	p. 8
Governance		
102-18	Governance structure	See Annual Report 2021, pp. 32–33
Stakeholder engagement		
102-40	List of stakeholder groups	p. 12
102-41	Collective bargaining agreements	p. 30
102-42	Identifying and selecting stakeholders	p. 12
102-43	Approach to stakeholder engagement	p. 40
102-44	Key topics and concerns raised	p. 40
Reporting practice		
102-45	Entities included in the consolidated financial statements	This is the sustainability report of Zug Estates Holding AG. For more information regarding the scope of consolidation, see Annual Report 2021, p. 24.
102-46	Defining report content and topic boundaries	p. 9
102-47	List of material topics	p. 10
102-48	Restatements of information	Restatements are indicated accordingly where they appear in the report.
102-49	Changes in reporting	There were no changes to the material topics during the 2021 reporting period. When defining the topic boundaries, the sub-topics "Training and further education", "Diversity and equal opportunity", "Protection of personal data and complaints process", "Terms of employment" and "Health" were added to the topic "Attractive working environment".
102-50	Reporting period	2021 calendar year. Exceptions are indicated accordingly in the report.
102-51	Date of most recent report	29 September 2021
102-52	Reporting cycle	Annual
102-53	Contact point for questions regarding the report	Philipp Hodel, Head of Communication, philipp.hodel@zugestates.ch
102-54	Claims of reporting in accordance with the GRI Standards	This report has been prepared in accordance with the GRI Standards: "Core" option.
102-55	GRI Content Index	pp. 44–48
102-56	External assurance	No external assurance was sought for this report.

		Disclosure/page
Topic-specific standards		
GRI 200:	Economic disclosures	
GRI 201:	Economic performance 2016	
GRI 103	Management approach 2016	
103-1/103-2/103-3		p. 15
201-1	Direct economic value generated and distributed	See Annual Report 2021, pp. 70–71
201-2	Financial implications and other risks and opportunities due to climate change	p. 16
201-4	Financial assistance received from government	p. 41
GRI 204:	Procurement practices 2016	
GRI 103: 103-1/103-2/103-3	Management approach 2016	p. 39
204-1	Proportion of spending on local suppliers	p. 39
GRI 205:	Anti-corruption 2016	
GRI 103: 103-1/103-2/103-3	Management approach 2016	pp. 41–42
205-3	Confirmed incidents of corruption and actions taken	p. 43
	Innovation	
GRI 103: 103-1/ 103-2/ 103-3	Management approach 2016	p. 14
	Environmental Disclosures	
GRI 301:	Materials 2016	
GRI 103: 103-1/ 103-2/ 103-3	Management approach 2016	p. 27
GRI 302:	Energy 2016	
GRI 103: 103-1/103-2/103-3	Management approach 2016	p. 18
302-1	Energy consumption within the organisation	p. 23
302-3	Energy intensity	p. 23
GRI 303:	Water and effluents 2018	
GRI 103: 103-1/103-2/103-3	Management approach 2016	p. 28
303-1	Interactions with water as a shared resource	p. 28
303-3	Water withdrawal	p. 28
GRI 304:	Biodiversity 2016	
GRI 103: 103-1/103-2/103-3	Management approach 2016	p. 17
304-3	Habitats protected or restored	p. 17
GRI 305:	Emissions 2016	
GRI 103: 103-1/103-2/103-3	Management approach 2016	p. 18
305-1	Direct (Scope 1) GHG emissions	pp. 24–25
305-2	Energy indirect (Scope 2) GHG emissions	pp. 24–25
305-3	Other indirect (Scope 3) GHG emissions	pp. 24–25
305-4	GHG emissions intensity	pp. 24–25

GRI 307:	Environmental compliance 2016	
GRI 103: 103-1/103-2/103-3	Management approach 2016	p. 41
307-1	Non-compliance with environmental laws and regulations	p. 43
	Social	
GRI 401:	Employment 2016	
GRI 103: 103-1/103-2/103-3	Management approach 2016	pp. 30–31
401-1	New employee hires and employee turnover	p. 33
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	p. 33
GRI 403:	Occupational health and safety 2018	
GRI 103: 103-1/103-2/103-3	Management approach 2016	pp. 30–31
403-9	Work-related injuries	p. 34
GRI 404:	Training and education 2016	
GRI 103: 103-1/103-2/103-3	Management approach 2016	pp. 30–31
404-1	Average hours of training per year per employee	p. 34
404-3	Percentage of employees receiving regular performance and career development reviews	p. 34
GRI 405:	Diversity and equal opportunity 2016	
GRI 103: 103-1/103-2/103-3	Management approach 2016	pp. 30–31
405-1	Diversity of governance bodies and employees	p. 35
405-2	Ratio of basic salary and remuneration of women to men	p. 35
GRI 406:	Non-discrimination 2016	
GRI 103: 103-1/103-2/103-3	Management approach 2016	pp. 30–31
406-1	Incidents of discrimination and corrective actions taken	pp. 35–36
GRI 413:	Local communities 2016	
GRI 103: 103-1/ 103-2/ 103-3	Management approach 2016	p. 39
413-1	Operations with local community engagement, impact assessments, and development programmes	p. 39
GRI 415:	Public policy 2016	
GRI 103: 103-1/103-2/103-3	Management approach 2016	p. 41
415-1	Political contributions	p. 41
GRI 419:	Socioeconomic compliance 2016	
GRI 103: 103-1/ 103-2/ 103-3	Management approach 2016	p. 41
419-1	Non-compliance with laws and regulations in the social and economic area	p. 43

Development of living environments		
GRI 103: 103-1/ 103-2/ 103-3	Management approach 2016	p. 36
Own disclosure	User satisfaction	p. 37
Own disclosure	Mix of uses	p. 38
Interconnected communities		
GRI 103: 103-1/103-2/103-3	Management approach 2016	p. 38

