



Ecas AG

BULLETIN

INSIDE THIS ISSUE

P. 2

Introduction to exciting newly completed retirement home

P. 3

Introduction to the design team and project summary

P. 4

Macro elemental analysis

P. 5

Ecas services



2023

ECAS BULLETIN

We strive to achieve the highest of standards for our clients and the best of ethical standards for our profession, thus endorsing the trust placed in us and benefitting the projects on which we work.

PORTHOF WEST

THE PROJECT

The Porthof West retirement home completes the third phase of a cluster of retirement home buildings developed by *Alterswohnungen Jona*, conveniently located in Rapperswil-Jona. Situated in close proximity to a number of essentials for elderly people such as public transport and shopping facilities, Porthof West offers the residents a high standard of living in a modern complex whilst also providing a chance for social interaction, independence and a sense of belonging.



QUICK FACTS

- CHF 25.7 M
- 59 Apartments and 19 nursing beds
- 7'747 m² GFA
- 25'335 m³ Volume
- 26-month construction programme
- Completed to SIA 500 standards

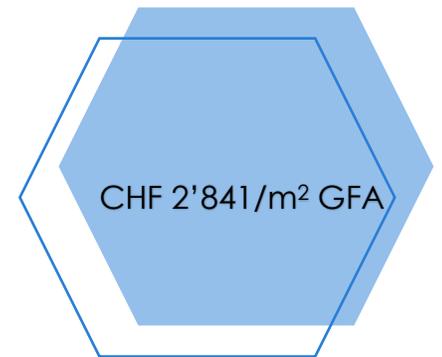
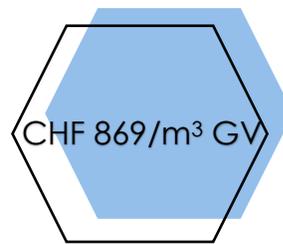
DESIGN

CONCEPT

The key design criteria for the client were to create a comfortable environment that is able to support a wide array of changing physical and cognitive abilities, including consideration in respect to mobility, ergonomics, frailty, ageing, physical activity and environmental control. In order to achieve a cost-efficient contemporary building which satisfies the above aspects, including pleasing aesthetics, a central design feature was implemented in creating a semi-enclosed building envelope with open masonry allowing natural light to penetrate apartment corridors. The semi-enclosed area gives rise to a multipurpose green space and recreational area which enables direct access to a new restaurant, a place to stretch legs, and a semi-private area to interact with visitors and other residents.

CONFIGURATION

The structure of the building consists of structural precast concrete panels with additional lateral support provided by concrete lift and stair cores. The façade combines single skin brickwork and precast concrete in a level-by-level alternation, with the elements combining to create a perforated stairwell within the façade. In addition, the retracted balconies complete the façade which deliver an extremely high performing energy



retention system that was designed with the help of an experienced façade planner. There are semi-enclosed external walkways to circulation areas which provide a sense of freedom to residents and enable the penetration of natural light from two sides. Above the nursing home area on the ground floor, different apartment types and sizes are offered on five upper floors. This is complemented by a basement with underground parking, shelter and the necessary ancillary rooms.

THE DESIGN TEAM

CLEA GROSS ARCHITEKTEN GMBH "EXPERIENCE MATTERS"



"When we took over the planning, we were entrusted with the establishment of a reliable project organization. At the same time, variation orders had to be incorporated into the planning at short notice, the cooperation with Gret Loewensberg Architekt had to be formalized, construction management specialists had to be engaged and the specialist planning team had to be set up and supplemented. Overall, a challenging start."

Clea Gross, Dipl. Architektin ETH SIA MRICS

From the conceptual design phase, Clea Gross Architekten GmbH were assigned to manage the overall planning and cost of the project. They were tasked with transforming the design, with the involvement of phase appropriate specialist planners and consultants, to develop the project that was initially conceived through an architectural competition won by Gret Loewensberg Architekten. The core team includes:

- Clea Gross Architekten GmbH, architect
- AK Treuhand, client representative
- BGS & Partner Architekten AG, site manager

CHALLENGES

Upon joining the project and in an attempt to steer the project in the right direction from the onset, Clea Gross Architekten GmbH implemented a change in the organisational structure. The organisational structure aimed to streamline decision making and improve project stakeholder processes and functions in order to meet the budgetary and construction programme constraints. The team were then able to effectively solve a number of critical challenges including:

- Reduce the project's cost estimate through value engineering exercises.
- Solve complicated legislative (disability equality act) and contractual (SIA 500) requirements in a cost-effective way.
- Coordinate site activities requiring expert planning for example, delivery and installation of the pre-cast concrete panels to the façade.
- Manage the complexity surrounding incorporating a restaurant and high dependency nursing area on the ground floor.
- Incorporate sustainable building practices.
- Manage neighbour expectations in a densely populated area in relation to the construction programme.

PROJECT SUCCESSES

The project team was able to deliver outstanding results to all project stakeholders in achieving the initial objectives of the project. Clea Gross Architekten GmbH, BGS & Partner Architekten AG and AK Treuhand worked together in ensuring the budget, scope and desired quality was achieved. Several standout features of the project include:

- Successful use of sustainable building practices and elements such as green roofing, triple glazed windows, automatic sunshades and awnings.
- Well-lit and flexible apartments with private, wind-protected balconies.
- Comfort for residents, temperature control (underfloor heating and thermostats provided in every room), laundry facilities to all floors, modern fitted kitchens including stone counter tops, glass splashbacks providing residents an extremely high quality of life.
- Integrated living through the use of common spaces such as eateries, parks and green spaces. The spaces also include an oasis-like gathering area which includes a fountain, an abundance of plants including a flower meadow, wooden play equipment and extensive areas in the shade for summer.

Summary of findings

COMPARISON OF COST RESULTS

CHF/m ² GFA	2'000	3'000	4'000	5'000	6'000
Building costs (BKP 2)	◆ 2'841.90				

CHF/m ³ Volume	600	800	1000	1'200	1'400
Building costs (BKP 2)	◆ 869.00				

MACRO ELEMENTAL ANALYSIS

CHF/m ² Footprint	500	650	800	950	1'000
MA Building substructure	◆ 578.06				

CHF/m ² EWA	400	700	1'000	1'300	1'600
MB External wall area	◆ 672.74				

CHF/m ² Roof Area	200	350	500	650	800
MC Roof(s)	◆ 536.06				

CHF/m ² GFA	200	300	400	500	600
MD Remaining structure	◆ 398.74				

CHF/m ² GFA	200	400	600	800	1'000
ME Mechanical & electrical	◆ 633.09				

CHF/m ² GFA	200	400	600	800	1'000
MF Finishing works	◆ 518.76				

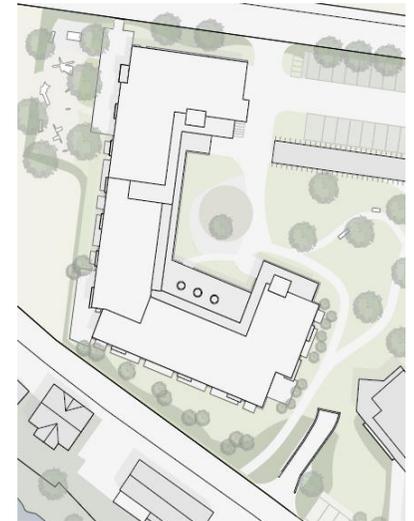
Porthof West's results indexed to 2022

FINANCIAL REVIEW

By assessing the project on a macro elemental group level through the utilization of extensive comparative data from the [ecas benchmarks®](#) database, a financial narrative can be quickly formulated. The first two metrics, regarding the cost per square metre and cost per cubic metre, immediately indicate that total project costs are comparatively low.

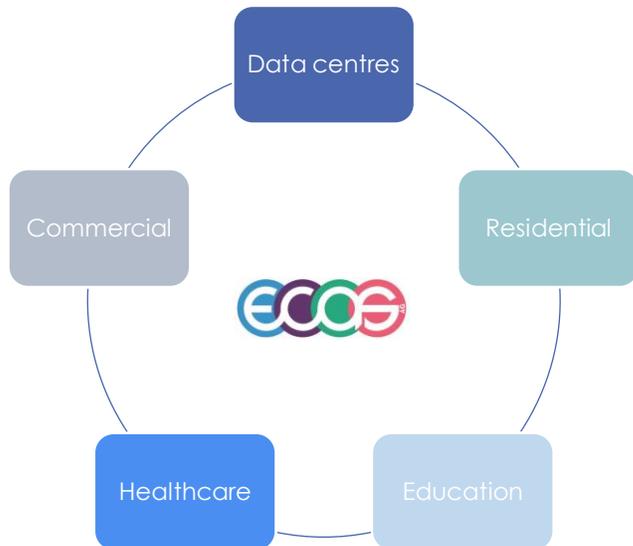
Also notable are the costs to **substructure works (MA)** due to the fact the building was built on a greenfield site and contains only one basement level with no significant site constraints posing problems for excavation or foundation works, MA forms part of the success story for the project. The **roof (MC)** and

building core (MD) costs are mid-range which is considered an accomplishment as the roof comprises of an environmentally friendly green roof and the building core contains complicated connections between the lift core walls and precast concrete panels which had to fuse with the complex geometry of the building. The metric surrounding **HVACS & E (ME)**, although not on the low-cost end, will provide residents with a comfortable environment with affordable on-going costs, supported in part due to the excellent thermal insulation properties of the building. Overall, the project team and especially Clea Gross Architekten GmbH did an exceptional job in delivering the project within budget, according to scope and within the project's schedule.



ECAS SERVICES

AREAS OF EXPERTISE



WHAT WE DO

Depending on the structure of your project organization, we accompany your building project in various roles and phases;

- whether as a key consultant over the entire project in the role of client representative or project manager
- or as a consultant and specialist for certain tasks in the role of client advisor; e.g. as a cost expert for a second opinion or as cost controller, etc. Thanks to our many years of extensive project experience, we understand clients and their needs.

DESIGN TO COST (DTC)

SIA norms predefine what a project's cost estimate level of accuracy for each project phase needs to achieve. During the conceptual design phase, this level of accuracy is in our opinion insufficient at $\pm 30\%$. It is thus impossible to calculate a reliable level of return. With the DTC method, and accompanying management, it is possible to achieve a far greater level of project accuracy.

With the DTC method, the target costs are defined in the course of the **feasibility study** by means of architectural, construction and qualitative benchmarks. Using the **ecas benchmarks®** construction cost database, a so-called base project is created with the help of comparison projects. Together with the total cost target, the generated macro parameters (EKG) form the cost framework, which is tracked throughout the duration of the project.

Quick Links

- [Ecas Building Cost Calculator](#)
- [Design to Cost DTC 12 Essentials](#)
- [LinkedIn - Ecas AG](#)

