

"Emerald", Warsaw

- Building Type - Residential, mixed high rise
- Project Type - New
- Country - Poland
- City - Warsaw
- Address - 78 Grzybowska Str.
- Client - IGD
- Architect - Epstein; SOM
- Phase - Project

Project Description

Commercial investment in a rapidly developing area of Warsaw city. Clearly aimed at big revenue from it's location in recently intense development of tall buildings. The design seems to be offered to global citizens rather than to average city dwellers. Location is carefully selected to make the most of it in terms of road, rail, air and public transport and of city culture.

*STEP programme

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Integrated Design Process

"Emerald" multi-unit residential building with mixed uses undergoes Integrated Design Process in collaboration between its developer - IGD and European programme INTEND - Integrated Energy Design for Public Buildings.

Integrated Design Process started at late stage of a design work, mainly due to a compromise of selecting right investment for research process. As R&D programmes need to do with real investments, concept projects are unfit to explore Integrated Design at work. However not as effective as wished, IDP process revealed some crucial decision points and motives behind those decisions.

Location

The building is located in the central district of Warsaw - the City with metropolitan population of 2mln., at Grzybowska Street, within 100 m from tramway stop and within 1000m to major public transport node at Central Railway Station. Most complementary functions are found in the range of 500m. The area is rather degraded post-industrial zone undergoing rapid development. There is no urban plan for the area, and many high-rise (up to 180m high) buildings have been allowed there.

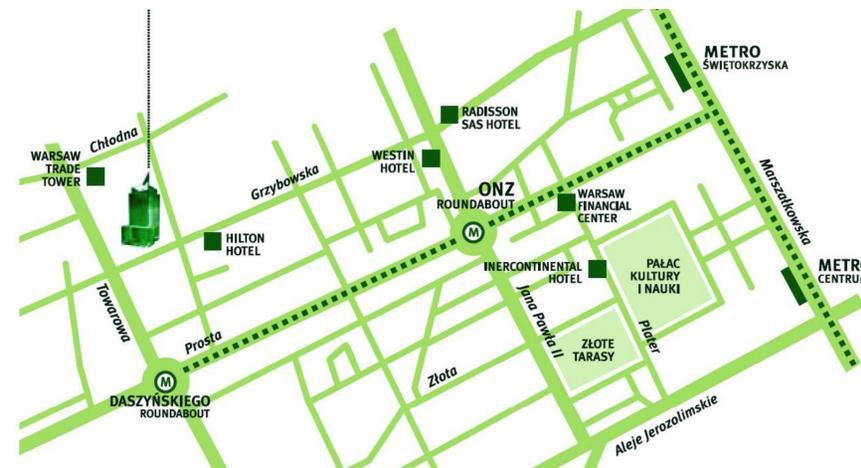


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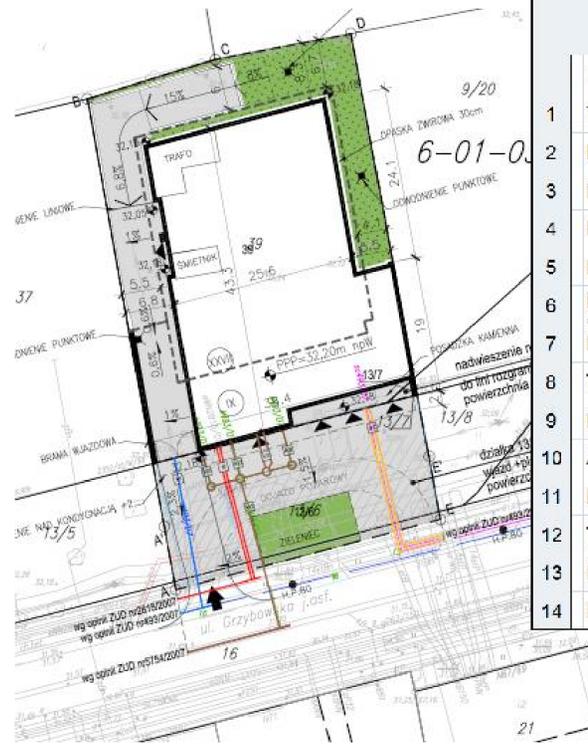
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The building

The building structure is reinforced concrete with curtain walls. Primary function is residential. It's dedicated to affluent clients, such as corporate management or global businesspeople. It lacks any outdoor amenities, and all the services like restaurant, cinema, household services, and fitness club are provided within the building itself.

Project data

gross area above ground : 31 415 sq.m
 gross area: 41 250 sq.m
 net area:
 site area: 1 999 sq.m
 height - 26 stories
 climate zone: moderate, transitional (semi ocean -semi continental)
 temperatures: winter: -20°C summer 22-24°C
 Number of heating degree-days: 3885
 Number of cooling degree-days: zero
 Number of dwelling units: 239
 Population: 700



Absolute Performance Results

These data are based on the Self-Assessment values			
	By area	By area & occupancy	
1	5	1	GJ/m ² *maph
2	63	11	MJ/m ² *maph
3	885	150	MJ/m ² *maph
4	2132	361	MJ/m ² *maph
5	9	2	MJ/m ² *maph
6	9	2	MJ/m ² *maph
7	2195	371	MJ/m ² *maph
8	0	0	MJ/m ² *maph
9	0.8	0.1	m ³ /m ² *maph
10	18	3	m ³ /m ² *maph
11	117	20	kg/m ² *maph
12		8,012	EUR per m2.
13		0%	Proportion of gross area of existing structure(s) re-used in the new project, percent
14		0%	Proportion of gross area of project provided by re-use of existing structure(s), percent



Assessment data

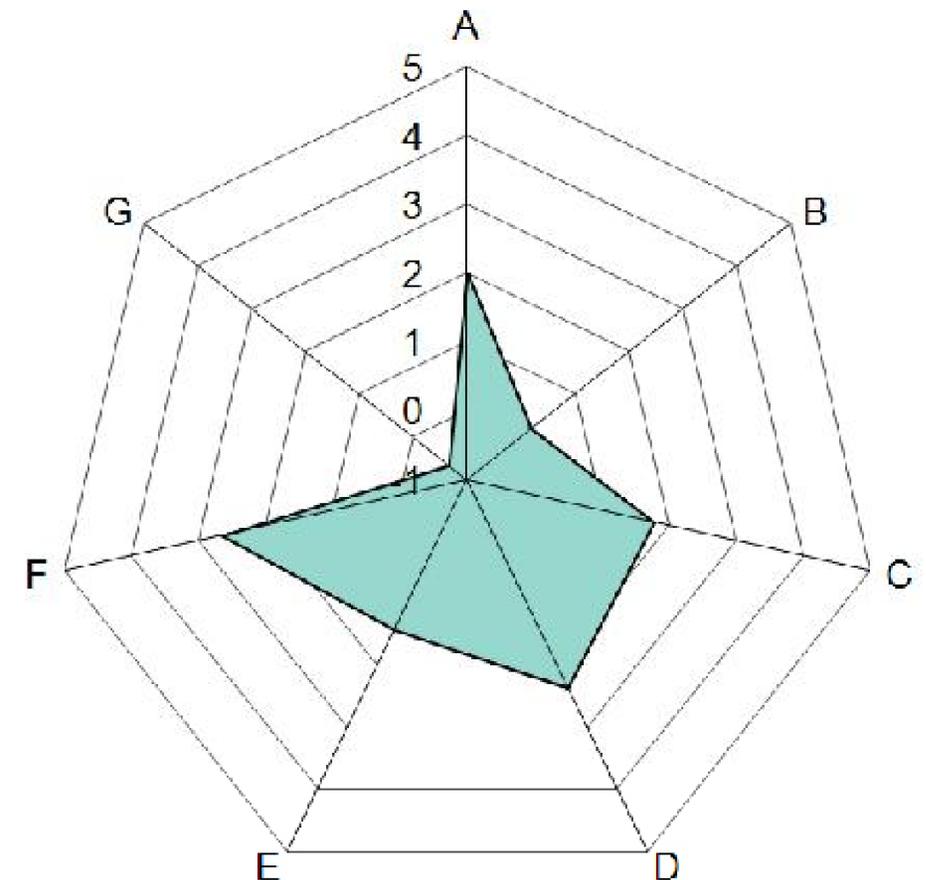
Distance from public transport stop: less than 100m
 Predicted travel mileage of personal cars: 900 000 km/year
 Development density as a ratio of surrounding area: 7
 Predicted net operating energy consumption: 127.5 kWh/sq.m*year
 GHG emissions: 64 kg CO2 equivalent /sq.m*year
 Embodied energy of materials aggregated: 4GJ/sq.m
 New materials mass: 6.5 kg/sq.m

Total weighted score: 1.5

SBTool Assessment Score polar graph representation

- A - Site selection, Project Planning and Development
- B - Energy and Resource Consumption
- C - Environmental Loadings
- D - Indoor Environmental Quality
- E - Service Quality
- F - Social and Economic Aspects
- G - Cultural and Perceptual Aspects

Where:
 0 = Acceptable Practice
 3 = Good Practice
 5 = Best Practice



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Sample dwelling units



Integrated Design

Investor's main strategy is primarily to carefully explore potential costs and benefits before any decisions regarding particular technical solutions are made. Therefore many possible features like heat recovery from swimming pool or detailed facade design are not specified in tender documentation. It is expected, that general contractor will offer systems and components to meet performance targets set by the developer and architect.

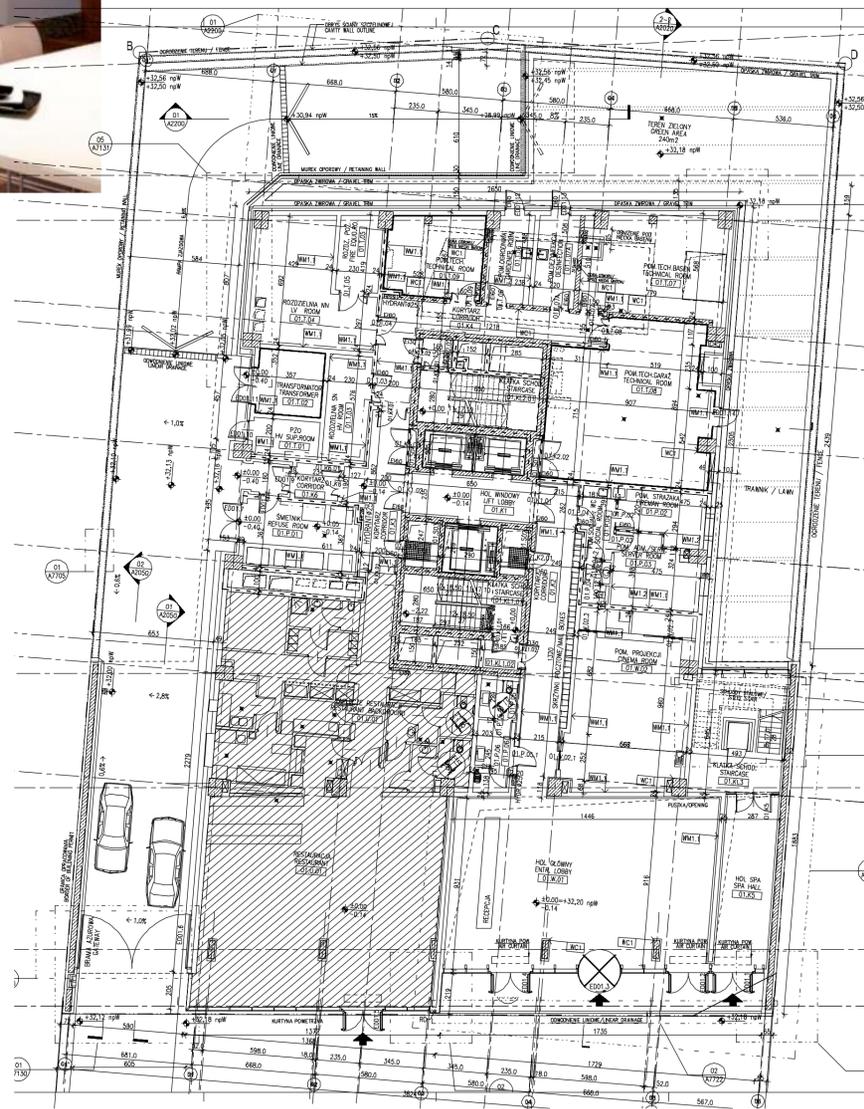
The centre of gravity of decision process is located between performance of the construction process and actual construction products market. There is also some important risk factor of innovation like IDP. Developers usually rely on their own experience, and tend to conserve and gradually evolve strategies that had proved successful so far.

The Project

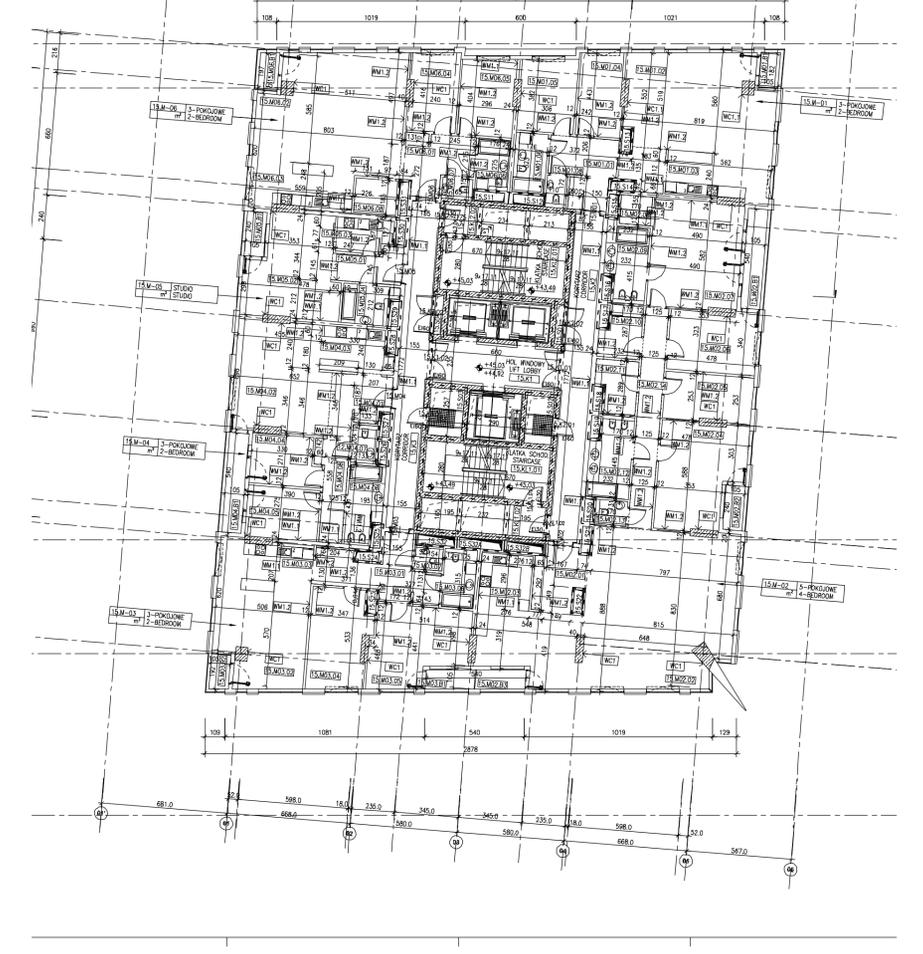
The project is precisely tailored for narrow segment of potential clients. Unlikely typical residential building it is rather unfit for families with children, and more like businesspeople residence.

The space is used very effectively, and links to the public space are reduced to minimum. Great care was taken to assure all needed complementary functions are accessible with no need of leaving the building.

The building operation will be monitored and centrally managed. Extensive security measures are provided.



Ground floor plan.



Typical floor plan.

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The SBMethod Assessment

The reason for low score in "Cultural Values" category is partly due to referencing the building to usual residential development. Probably the assessed project should be classified as a hybrid of apartment building and hotel. Anyway, the building correspondence with the city culture is limited to it's proximity to rapidly developing office district, which is considered a positive response to the need of reducing travel distance between work and residence.

It is necessary to point out, that it's the planning authority and not investor's responsibility to set urban planning objectives for the project. Unfortunately, there is no urban development plan enacted for the area.

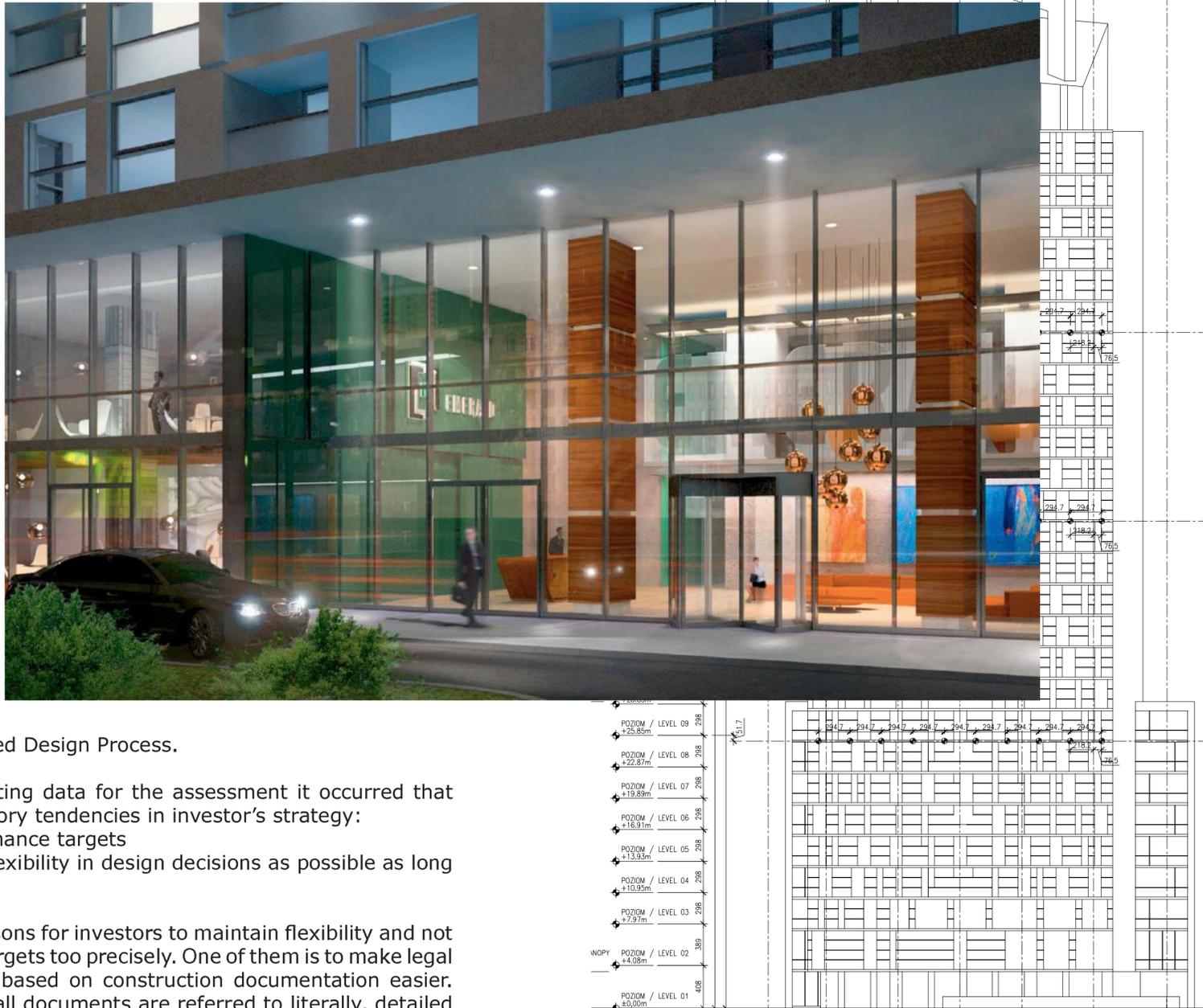
The designed technology is of high performance type, typical for office buildings. The object itself sets a new standard for high-rise apartment buildings in Warsaw.

As many decisions on detailed technical solutions has been postponed to select optimal technologies at the time of their eventual installation, there is still some room to improve actual performance by consequent continuation of Integrated Design Process.

In the process of collecting data for the assessment it occurred that there are two contradictory tendencies in investor's strategy:

- to set the high performance targets
- to maintain as much flexibility in design decisions as possible as long as possible.

There are important reasons for investors to maintain flexibility and not to define performance targets too precisely. One of them is to make legal proceedings, which are based on construction documentation easier. As in legal proceedings all documents are referred to literally, detailed specifications may prove difficult to change or refine.



The most characteristic feature of the project is that it isolates from outdoor space.

