"Emerald", Warsaw

**Project Description**

Commercial investment in a rapidly developing area of Warsaw city. Clearly aimed at big revenue from its 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.

**Integrated Design Process**


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.

*INTEND programme*

The presentation was prepared due to the support of STEP Project PL 0077 financed by a grant from Iceland, Liechtenstein and Norway through the EEA Financial Mechanism and the Norwegian Financial Mechanism.

**Design:**

Czesław Komorowski MSc Eng. Arch. 
Monika Bakowska MSc Eng. Arch.

**Assessment Team:**

Dr Marcin Malinowski PhD Eng.; AID 
Adrian Trząski Eng. PhD student; WUT 
Dr Jerzy Sowa PhD Eng.; WUT 
Marcin Idczak MSc Eng, NAPE

**Assessment Consultant:**

Dr Aleksander Panek PhD Eng.; NAPE

**Integrated Design Consultant:**

Dr Dagny Ryńska PhD Arch. Eng.; WUT
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: 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

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
**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. Unlike 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.
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 its 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 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.