

MAINTAINING IN OPERATION OF WELDED METAL STRUCTURES BY CHANGING THEIR USE

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***Abstract:** Existing old structures are, in most cases, dismantled. Taking into account the technical state of the structure, it is possible to analyze a reuse solution. Re-use of existing structures is a real concept linked to sustainability. When old structures are no longer able to meet current needs, the reuse concept can provide them with a second life in terms of the sustainable development concept*

***Key words:** re-use, old steel structures, new concept*

1.Introduction

By reusing existing buildings, not only demolition waste is minimized, but the new resources needed to renovate and renovate the building are much smaller than necessary to build a new building. In addition, the reuse of existing buildings can preserve the cultural and historical value of older buildings. Such as the redevelopment of the Kinnaird House, which it obtained, has achieved an excellent BREEAM rating.



Fig. 1. Kinnaird House

BREEAM (BRE Environmental Assessment Method) is a method of assessing the ecological performance of buildings. This method was developed in the UK by Building

Research Establishment (BRE).

BREEAM offers its customers, developers and designers:

- Market recognition for buildings with low environmental impact;
- Ensure that the best environmental solutions are incorporated into certified buildings;
- Inspiration to find innovative solutions that minimize environmental impact;
- Higher standards than required by applicable law;
- A tool to reduce operating costs and improve the working environment;
- A standard that demonstrates the focus on corporate and organizational environmental objectives.

American Classification System LEED- Leadership in Energy and Environmental Design

- 40-49 points - certified project,
- 50-59 points - Silver Certification level,
- 60-69 points - Gold certification level,
- 80 or more points - the Platinum certification level.

Clădiri de birouri verzi



Bucharest One
București, Sector 2
Bulevardul Barbu Vacarescu 201
Status: în construcție
Completare: 1Q 2016
Spațiu birouri: 51 000 mp
Certificare clădire verde
LEED - certificată (în curs de certificare)



Ethos House
București, Sector 2
Calea Floreasca, Nr. 240B
Status: în construcție
Completare:
Spațiu birouri: 7 760 mp
Certificare clădire verde
BREEAM (în curs de certificare)



EuroTower
București, Sector 2
Str. Dinu Vintila 11
Status: existentă
Completare: 2Q 2010
Spațiu birouri: 16 300 mp
Certificare clădire verde
BREEAM - foarte bine (obținută)



Green Gate
București, Sector 5
Bulevardul Tudor Vladimirescu, ...
Status: existentă
Completare: 2Q 2014
Spațiu birouri: 15 000 mp
Certificare clădire verde
LEED - gold (se aplică)



HBC Dorobanti
București, Sector 1
Strada Emil Pangratti, Nr. 30A
Status: existentă
Completare: 2Q 2014
Spațiu birouri: 2 720 mp
Certificare clădire verde
BREEAM (se aplică)



Hermes Business Campus
București, Sector 2
Bulevardul Dimitrie Pompeiu 5-...
Status: în construcție
Completare: 1Q 2014
Spațiu birouri: 18 225 mp
Certificare clădire verde
BREEAM - excelent (se aplică)

Fig. 2. Buildings from Bucharest - American Classification System **LEED**

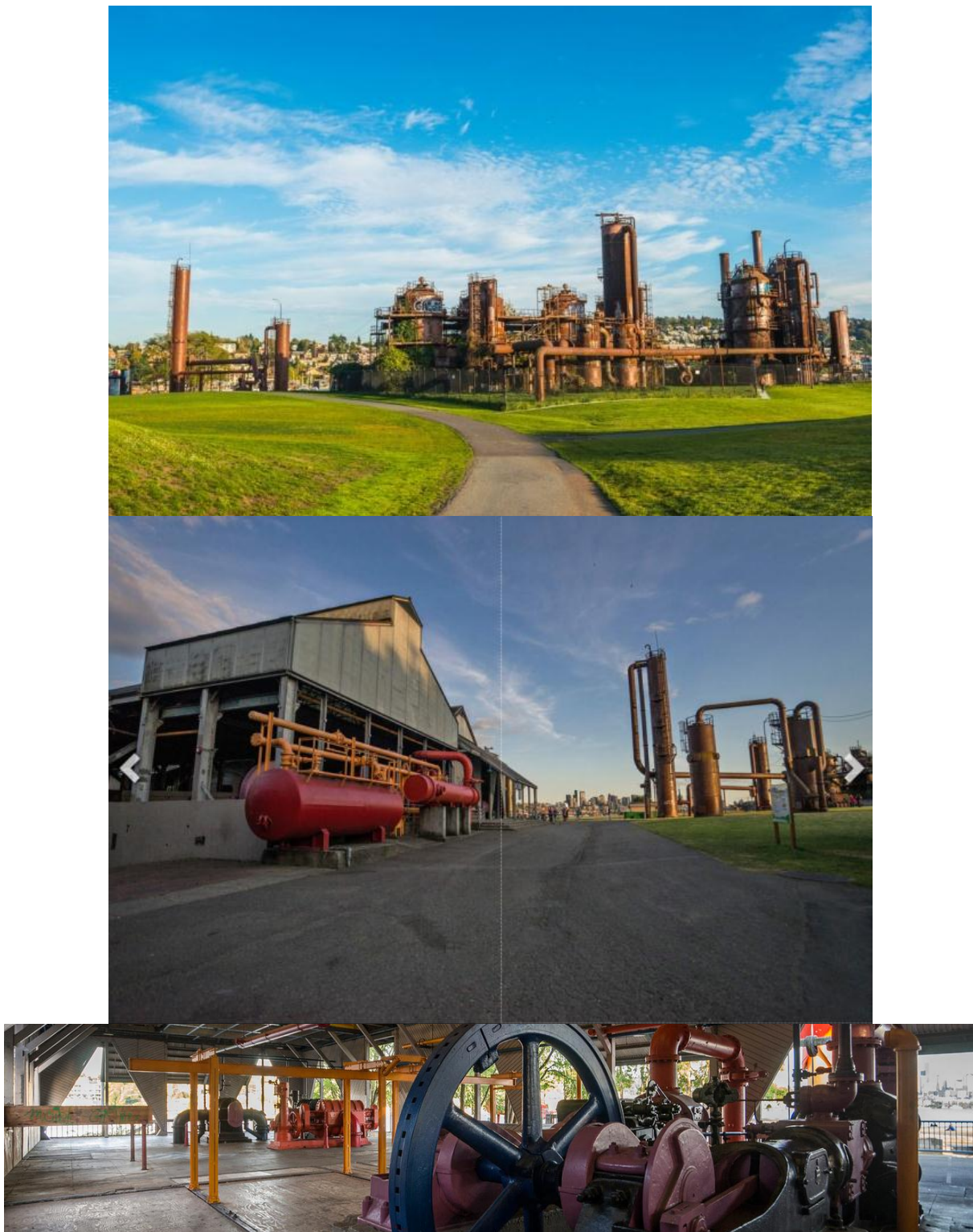


Figure 3. Gas Works Park in Seattle

The LEED or BREEAM classification systems are also required to be met by welded metal structures made by the reuse of some elements of the old welded structure (eg, beams and columns in an assembly that are re-used in another assembly).

Gas Works Park in Seattle originally operated as an industrial petroleum platform from

1906 to 1956. The city of Seattle bought the factory in 1962, hired a landscape architect Richard Haag for redesigning, and eventually turned the area into a public park in 1975.

Much of the remains of the old platform now serve as buildings. In the case of the conversion of the platform into the park, some of the ruins, such as a children's playground, were built inside the former exhaust-compressor building of the plant.

2. Conclusions

Reuse of existing (old) structures must be designed in accordance with all stakeholders to ensure safety and efficiency; the technical solution chosen must also comply with other criteria such as structural robustness, economy and smooth execution.

References

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