

# Rehabilitation of the Hôtel des Postes - Strasbourg



**The project consists of the massive rehabilitation of the Hôtel des Postes in Strasbourg to significantly reduce the building's carbon footprint.**

<b>Starting date of the project</b>	Start of construction in June 2020.
<b>Project Localisation</b> Places of implementation of the project at this stage and targeted geography if replicable.	Strasbourg, France
<b>Project objectives</b> Type of climate innovation of the project with a description of the problem/issue addressed	Reducing the carbon footprint of the construction of a former post office building during a massive rehabilitation operation.
<b>Detailed project description</b>	<p>Reducing the carbon footprint of its activities is an essential requirement in the conduct of Bouygues' operations.</p> <p>This major renovation project concerns a former post office building of neo-Gothic architecture, located in a district classified as a UNESCO heritage site. It is spread over a surface area of 20,000 m<sup>2</sup> that has been entirely renovated, with 2,000 m<sup>2</sup> dedicated to the new building. The aim here is to reduce the carbon impact of the operation and to save resources and raw materials while preserving the existing structures as much as possible, and using the circular economy.</p> <p>The future use of the building is distributed as follows:</p> <ul style="list-style-type: none"> <li>• 62 units in open access (Premium)</li> <li>• 20 units in dismemberment</li> <li>• 18 subsidized rental units</li> <li>• 1 managed residence of 84 units for seniors (Jardin d'Arcadie)</li> <li>• 2,400 m<sup>2</sup> of offices</li> <li>• 1 Brewery</li> <li>• 1 post office</li> </ul> <p>The historic building is located at the edge of the plot and occupies a large part of the land. This building will be entirely renovated to accommodate all the real estate products defined above. A basement for the parking of motorized vehicles will be built. The inner courtyard of the building will also house a new office building, the "Cluster".</p> <p>The project has been awarded the following labels: "Effinergie" renovated housing and "BREEAM" new commercial buildings. The operation is also a winner of the BTP 2020 call for projects entitled "Mobilizing the entire construction industry to meet the challenges of waste reduction and recovery" of the CLIMAXION program initiated by ADEME and the Région Grand Est.</p> <p><b>Principle of the circular economy implemented</b></p> <p>The whole structure, the facades and the roof have been preserved. In addition, a part of the wooden windows was kept either by reusing them in situ or by valorizing them ex situ. The conservation and renovation of a large part of the interior doors was also possible. As for the carpet, it was removed and used for insulation.</p> <p>This rehabilitation operation also allowed a saving of 57 million liters of drinking water compared to a new operation of the same surface.</p>

Main project's drivers for reducing the greenhouse gas emissions	<b>Reduction levers</b>		<b>Details on the aspects of the project</b>	
	<input type="checkbox"/> Energy and resource efficiency (including behaviour)			
	<input checked="" type="checkbox"/> Energy Decarbonisation		The heating of the entire operation is provided by a district heating network comprising 70% Renewable Energy.	
	<input type="checkbox"/> Energy efficiency improvements			
	<input checked="" type="checkbox"/> Improving efficiency in non-energy resources		Circular economy implemented for interior and exterior wood joinery and carpeting.	
	<input type="checkbox"/> Emissions absorption: creation of carbon sinks, negative emissions (BECCS, CCU/S, ...)			
	<input type="checkbox"/> Financing low-carbon producers or disinvestment from carbon assets			
<input type="checkbox"/> Reduction of other greenhouse gases emission				
Emission scope(s) on which the project has a significant impact and quantification of GHG emission reductions per emission scope			<b>Aspects of the project contributing to the reduction of emissions by emission category</b>  <b>Quantification of associated GHG emissions by emission category</b>  Please follow the quantification methodology used in <a href="#">the Afep guidelines</a> .	
	<b>Reduction of the company's carbon dependency</b>			
	<b>Scope 1</b> <i>Direct emissions generated by the company's activity.</i>			
	<b>Scope 2</b> <i>Indirect emissions associated with the company's electricity and heat consumption.</i>			
	<b>Scope 3</b> <i>Emissions induced (upstream or downstream) by the company's activities, products and/or services in its value chain.</i>		Circular economy and reuse of materials with conservation of an existing building.  Connection to the urban heating network  Use of concrete with reduced CO2 emissions	
			Avoided emissions (compared to new materials) : - for the carpet: 1,239kg CO2eq; - for windows: 2,087kg eq CO2  Gain of 426kg eq of CO2 per m2, compared to a standard new project in France (on the overall carbon footprint of the building).  92 tCO2 (compared to conventional concrete)	
	<b>Increase of carbon sinks</b>			
	<b>Emissions Absorption</b> <i>Carbon sinks creation, (BECCS, CCU/S, ...)</i>			
	<b>GHG emissions avoided by the company at third parties</b>			
	<b>Avoided Emissions</b> <i>Emissions avoided by the activities, products and/or services in charge of the project, or by the financing of emission reduction projects.</i>			
	<b>Clarification on the calculation or other remarks:</b> Global analysis, building product and equipment (PCE) and Energy. This analysis focuses on the overall carbon weight of the building, i.e. the PCE + Energy perimeter in operation.  Thanks in particular to the virtuous heating network of the Esplanade (70% renewable energy), the apartments of the Hôtel Des Postes program emit 30% less CO2 than a standard apartment heated with gas.			
	<b>Data used:</b> <ul style="list-style-type: none"> <li>Emission factor of the concrete used (compared to that of a standard concrete): the concrete used in the operation is CEM III which is 160 kgeq.CO2/m3 , compared to a "classic" CEM II which is 240 kgeq.CO2/m3 ;</li> <li>Emission factor of the heating network used (compared to the energy source that would have been used instead): 344 kgeq.CO2/m² sdp for the Hôtel des Postes operation, compared to the other Bouygues Immobilier operations which are at 673 kgeq.CO2/m² sdp on average;</li> <li>Quantities of recycled carpet installed and the number of windows and emission factors considered (with their source):</li> </ul>			

	<ul style="list-style-type: none"> <li>○ Carpet: 2,700 m<sup>2</sup> of carpet was recycled with another company to make insulation. The end-of-life emission factor of the carpet is 0.459 kgeq.CO<sub>2</sub>/m<sup>2</sup>, so this gives 1,239 kgeq.Co<sub>2</sub> avoided;</li> <li>○ Windows: 59 joineries, so 216 m<sup>2</sup> were removed and reused ex-situ. The end-of-life emission factor of the joinery is 9.66 kgeq.CO<sub>2</sub>/m<sup>2</sup>, which gives 2,087 kgeq.Co<sub>2</sub> avoided.</li> </ul>
<b>Modality of verification of the quantification.</b>	<b>Calculation standard used (ADEME base, GHG protocol, etc.):</b> Life Cycle Analysis study of the building  <b>Verification of the calculation (internal or external):</b> this calculation was carried out by an external consulting firm
<b>Other environmental and social benefits of the project</b>	<p>This project contributes to the following SDGs:</p> <ul style="list-style-type: none"> <li>• SDG 12 Sustainable consumption and production: the principles of the circular economy have been followed for the use of certain materials on the site, thus reducing the consumption of new raw materials while recycling certain components. This goes in the direction of a more responsible and above all sustainable consumption and production. This is a moderate and efficient use of resources perceived as non-renewable, while optimizing the life span of consumer goods and ensuring that nothing is lost.</li> <li>• SDG 13 Climate change: the rehabilitation of the building and the circular economy implemented on this project avoids new CO<sub>2</sub> emissions while recycling some materials. Thus, less carbon was emitted throughout the production chain, whether for the extraction of raw materials or for the transport of the latter. The following 2 points will have been avoided: <ul style="list-style-type: none"> <li>○ Total demolition of the existing and carbon emissions</li> <li>○ New construction, consumption of non-recycled raw materials and carbon emissions.</li> </ul> </li> </ul>
<b>Project maturity level</b>	<input type="checkbox"/> Prototype laboratory test (TRL 7) <input type="checkbox"/> Real life testing (TRL 7-8) <input type="checkbox"/> Pre-commercial prototype (TRL 9) <input type="checkbox"/> Small-scale implementation <input checked="" type="checkbox"/> Medium to large scale implementation  <b>Remarks:</b> The work is in progress, but we can already see that the reuse and / or recovery of existing materials is in full evolution. This approach especially in city centers is multiplying. The channels are structured efficiently and begin to bring solutions to the owners.
<b>Capacity and conditions of the project reproducibility, with associated climate impact mitigation potential</b>	Project entirely reproducible under the same conditions (same type of initial building).
<b>Amount of investment made (in €)</b>	Amount of the works 34 M€ duty free
<b>Economic profitability of the project (ROI)</b>	<input type="checkbox"/> ST (0-3 years) <input type="checkbox"/> MT (4-10 years) <input checked="" type="checkbox"/> LT (> 10 years)  <b>Remarks:</b> <a href="#">click here to enter the information</a>
<b>Engaged partnerships</b>	Owner: Bouygues Immobilier Architect - Agence Weber & Keiling Assistant Project Manager: Environment - ELAN Cleaning company - Lingenheld General contractor - Bouygues Bâtiment Nord-Est
<b>Open comments from the project owner</b>	This innovative and inspiring project has allowed the entire team (developer, project management and contractors) to progress in this type of construction while remaining respectful of the environment and our heritage. It has shown the way for other works.
<b>More about the project</b>	
<b>Contact the company carrying the project</b>	<a href="mailto:j.brisebourg@bouygues-immobilier.com">j.brisebourg@bouygues-immobilier.com</a>
<b>Project URL links</b>	<a href="https://www.bouygues-immobilier-corporate.com/fr/communique-de-presse/renovation-de-lhotel-des-postes-de-strasbourg-par-bouygues-immobilier">https://www.bouygues-immobilier-corporate.com/fr/communique-de-presse/renovation-de-lhotel-des-postes-de-strasbourg-par-bouygues-immobilier</a>

Illustrations of the project

