THE JUNO BEACH CENTRE’S COMMITMENT TO A COMPREHENSIVE, LONG-TERM SUSTAINABLE DEVELOPMENT PROJECT

An approach and strategy sponsored ‘in spirit’ by Jean Jouzel and supported by François-Marie Bréon of the Intergovernmental Panel on Climate Change.

*Courseulles-sur-Mer, Juno Beach, August 2020*

Translated to English January/February 2021

“They have fought to protect our land and our freedom. It is now our collective duty to protect what they’ve fought for.”

“The profound crisis within our societies is obvious. Ecological disruption, social exclusion, unlimited exploitation of natural resources, relentless and dehumanizing pursuit of profit, and widening inequalities are at the heart of contemporary issues. However, all over the world, men and women are organizing themselves around original and innovative initiatives, aiming to bring new perspectives for the future. Solutions exist and new proposals are emerging across the four corners of the planet, often on a small scale, but always with the aim of initiating a veritable movement to transform societies.”

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1 Tree-planting remembrance project in Canada. https://www.hohtribute.ca/en/home
2 Prologue, Domaine du Possible, Ed. Actes sud
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Preamble

Located on the Anglo-Canadian D-Day Landing Beach, the Juno Beach Centre (JBC) - the Canadian museum on the Landing Beaches in Normandy - was born in 2003 from the shared vision of a mayor of Courseulles-sur-Mer and a Canadian veteran: establishing a museum dedicated to the memory of the role played by Canadians during the Second World War. Over the past 17 years, the JBC has become a key destination for Franco-Canadian remembrance tourism; a place of history, commemoration and education. Its window onto Canada today creates a dynamic site anchored in the present, and an evolving tool that promotes a civic reflection on the world around us. The JBC looks back on yesterday to help us understand today and contribute to preparing for tomorrow.

Seventeen years is approximately the same amount of time that has passed since the speech made by Jacques Chirac, President of the French Republic, during the World Summit on Sustainable Development in Johannesburg. At the time he said:

"Our house is burning down and we're blind to it. Nature, mutilated and overexploited, can no longer regenerate and we refuse to admit it. Humanity is suffering. It is suffering from poor development, in both the North and the South, and we stand indifferent. The earth and humankind are in danger and we are all responsible. It is time to open our eyes. Alarms are sounding across all the continents... We cannot say that we did not know! Let us make sure that the 21st century does not become, for future generations, the century of humanity's crime against life itself."3

Confronted with the environmental disaster that asserts itself more and more each day, the Juno Beach Centre began asking itself the following questions: What have we done with the peace obtained in 1944 in Europe, and what are we going to do with it? Today, what are the biggest threats to our democracies and to the planet? Out of respect for the sacrifices made by Canadians to liberate Europe during the Second World War, how can we act and do our part in the fight for the protection of our planet?

In 2019, the JBC welcomed 103,000 visitors, among whom nearly 25% were under the age of 18. That same year, the museum began a reflection on sustainable and environmentally responsible tourism4, in the view of respecting the ecological balance on the peninsula on which it is located. More broadly, there was an awareness of the necessity to be part of a transition aimed at reconciling the numbers of visitors required for the museum to continue to exist and the means by which to do so.

Since then, the COVID-19 pandemic has increasingly made evident the need for change, resilience and adaptation. The pandemic and the confinement highlighted the impact our lifestyles have had on the planet and by extension, the urgent need to hasten the ecological transition. Numerous aspects of the JBC’s operations will find themselves transformed in ways that are, at this stage, difficult to evaluate, but are nevertheless inevitable. Trends in the tourism industry related to the environment had started to emerge before the pandemic and we can anticipate deep structural changes still to come. The JBC has outlined a strategy wherein actions related to sustainable development are integrated into the operations of the museum and its activities, including promotion, marketing, partnerships, etc. It is necessary to act before it is too late as:

“The climate machine is racing dangerously fast. We have very little time left to reverse the curve of greenhouse gas emissions if we are to prevent today's young people from a climate to which it would be difficult, if not impossible, to adapt.”5

The JBC is dedicated to multiple missions across its territory (memory, education, citizenship, the economy...), and it is conscious of the need to take action and play a role in today’s society. As such, it seeks to be a

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4 Sustainable tourism is defined by the World Tourism Organization as “Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities”.
proactive force by creating a project that is comprehensive, coherent, and advantageous for the City of Courseulles and for its own interests, as well as those of locals and the environment. In light of the United Nation’s Sustainable Development Goals for 2030 and the related objectives set forth by French authorities in order to put these goals into practice, the JBC wishes to participate in this larger reflection and where possible, facilitate and take action, as the museum’s future is also concerned.

The objectives of this document include:

- Presenting the JBC’s vision for addressing environmental issues, its approach to analyzing its greenhouse gas emissions and to decarbonising;
- Presenting its strategy, objectives and management over the short-, medium- and long-term with a model of Responsabilité Sociétale des Entreprises (Corporate Social Responsibility [CSR]) (see Annex 1 – Definitions RSE and ESG) in line with the museum’s Projet Scientifique et Culturel (Scientific and Cultural Project);
- Demonstrating the compatibility of the JBC’s plan with those at the international, national, regional and local levels, in order to rally a willingness to take action and attract financial support and investments.

1. The Juno Beach Centre: the Canadian Museum on the D-Day Landing Beaches in Normandy

A Brief History – Origins and Mission

Before the JBC opened in 2003, there was no official site presenting the full history of Canada’s participation in the Second World War. During the mid-1990s, Canadian veterans and their families returned to Juno Beach: the Norman beach where they had once contributed to the liberation of Europe from Nazi occupation. They made the trip with their children and grandchildren, sharing their stories and those of their fallen comrades who laid at rest in cemeteries close by. It made them question what would happen when they were no longer around to tell the stories themselves. Who would remember and how?

In 1994, at the age of 24, Garth Webb, a lieutenant with the Royal Canadian Artillery, led his men into battle on Juno Beach on D-Day. At nearly 80 years old, he returned to the former front with fellow veterans, their families and supporters at his side. He became the driving force behind the construction of the JBC, an interpretation centre of over 1,500 m² and costing 6 million €.

On the 59th anniversary of D-Day, the JBC opened its doors to the public: a site of memory, education, and culture, and a bridge between generations and nations with a mission going beyond the commemoration of the D-Day Landings. The vision which has guided the JBC since its conception is based on the three core purposes:

1. Provide a tangible and fitting memorial to Canada’s participation in the Second World War and recognize the emergence of Canada on the world scene;
2. Remember and commemorate the sacrifices made by all Canadians who were part of the Allied victory in all theatres of war and at home; and
3. Educate adults and children of today and future generations about the role of Canada in preserving the freedoms we are privileged to enjoy today.

A visit to this interpretation centre takes the visitor through three phases: emotion, explanation and reflection.

During 17 years of operation, the JBC has seen a steady increase in visitors, made a mark as a Canadian museum in Europe, and gained credibility and savoir-faire (often based on expertise in Canadian museology and interpretation), becoming a major player in remembrance tourism on the D-Day Beaches in Normandy.
Today, the JBC is sacred land for Canada in France and a tribute to the men who sacrificed themselves for a better world. The history of the war is illustrated and complemented by testimonies highlighting the human dimension; a representation of the society which veterans helped to forge and which contributed to the Canada of today.

**Without a doubt, the success of the last two decades has demonstrated the need for such a place for transmission of memory and education in Europe, presenting Canada’s role and its values which resonate in the lives of visitors.**

**Governance & Relationship with Courseulles**

The JBC is a private museum owned by the Juno Beach Centre Association in Canada and led by a volunteer Board of Directors. This Board leads the Board of Directors of the Association Centre Juno Beach in France, an Association Loi 1901 governed and taxed in accordance to French law. The team in France includes French and Canadian staff. The Government of Canada gives the museum yearly financial assistance in order for it to maintain a balanced operational budget and make essential investments.
In 2001, the City of Courseulles-sur-Mer and the Association Centre Juno Beach signed an emphyteutic lease for the duration of 99 years so that the Canadians could construct and open their museum. The Juno Beach Centre was then built between the years 2001 to 2003, facing the English Channel and Juno Beach.

In 2004, the city revitalized the coastal dunes in front of the museum, allowing for the return of natural species and presenting a historical and cultural didactic circuit on an area that became known as “Juno Park”. Juno Park also includes remains of the Atlantic Wall, which are either excavated and open to the public or buried and protected by dunes and vegetation, and which are owned by the City of Courseulles.

Key dates

1994 Garth Webb visits Normandy
2001 First stone of the JBC laid
2003 Opening and inauguration
2004 Ceremony for the 60th anniversary of D-Day, in the presence of HRH Queen Elizabeth II, the Governor General, and the Prime Minister of Canada. The JBC becomes the venue for official Canadian ceremonies and binational Canada-France ceremonies
2004 Inauguration of Juno Park/ First guided tours with Canadian guides
2005 Inauguration of an Inukshuk during a spiritual voyage undertaken by First Nations communities and the Governor General of Canada
2009 Ceremony for the 65th anniversary of D-Day, in the presence of the Prime Minister of Canada
2012 Death of President Garth Webb, who is succeeded by President Don Cooper
2013 Inauguration of the film “They Walk With You’ and a new cinema room
2014 Ceremony for the 70th anniversary of D-Day, in the presence of the Prime Minister of Canada
2014 Addition of an underground German command post to the Juno Park tour
2016 First digital app for families and school groups in the temporary exhibition
2017 The Prime Minister of Canada and his family visit the temporary exhibit “From Vimy to Juno”
2019 Binational ceremony for the 75th anniversary of D-Day with the prime ministers of France and Canada + the first international ceremony on Juno Beach with representatives from 16 nations
2019 New youth circuit “Explore Juno” with new displays and new apps in the permanent exhibit
2019 One millionth visitor since the opening. The JBC welcomes 103 057 visitors during the year
2020 COVID-19 forces the unprecedented closure of the museum from March 16 to June 6, 2020
2. Context - Environmental Issues and JBC Motivations

Today, the environment is a major issue on which states and political leaders are reflecting. Yet their declarations of intent sometimes have difficulty materializing for many reasons, whether administrative, societal, financial or ideological. At the highest level, international meetings on the subject of the environment provide ambitious directions to follow. At the other end of the chain, civil society is increasingly reacting to and addressing questions which, decades ago, scientists had already alerted the world and the Club of Rome, by pointing out the limits of growth and the need to factor the environment within our economic model.

In 2015, the United Nations took a major step forward by adopting a far-reaching plan to transform the world. The 2030 Agenda translates into 17 Sustainable Development Goals (SDGs), outlining the trajectory necessary to progress towards a sustainable world.

France has made commitments to achieve the objectives of the 2030 Agenda, with a roadmap of France's Sustainable Development Goals, some of which include more ambitious trajectories, in respect to the Paris Agreement. France is committed via its Stratégie Nationale Bas-Carbone (SNBC) (National Low-Carbon Strategy).

"Introduced by the Energy Transition Law for Green Growth, the SNBC is France's roadmap to fight climate change. It provides guidelines for implementing the transition to a low-carbon, circular and sustainable economy in all sectors of activity. It defines a trajectory for reducing greenhouse gas emissions until 2050 and sets short- and medium-term objectives: carbon budgets. It has two ambitions: to achieve carbon neutrality by 2050 and to reduce the carbon footprint of French consumption. Public decision makers, nationally and regionally, must take it into account."

The new version of the SNBC and the carbon budgets for the periods 2019-2023, 2024-2028 and 2029-2033 were adopted by decree on April 21, 2020. The greenhouse gas emissions assessment is therefore a concept to be integrated from now on (see Appendix 2 - 10-point summary of the SNBC).

Various initiatives or events are also bringing about change: young people rallying for the cause of the environment; the Citizens' Commission 2020; the successes of ecologists in the last municipal elections in France; European funding to assist the United States in managing the crisis, etc.

COVID-19 reminded us that humans will not always be able to seek to control nature, disrupt ecological balances, and dictate law. The pandemic and the lockdown highlighted the urgency of taking action for the environment. The health crisis also emphasized the risks that threaten the entire tourism sector (limitation of travel = a drop in activity).

The JBC “Hub”: The Link Between Memory, History, Peace and Environmental issues

The JBC is a museum with the transmission of memory built into its DNA. Discovering Canada’s role during the war and the current day invites a reflection on citizenship, peace and the world today. In this way, the JBC has a major role to play for promoting a better tomorrow.

Canadians came to Europe’s rescue twice during the twentieth century, and the JBC once again enables Canada to contribute to peace in a place where men lost their lives during the Second World War.

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6 Already in 1972, Denis Meadows alerted us in the book The Limits to Growth, known under the name Meadows Report. This report supported by the Club of Rome, is one of the references of debates and reviews that relate to the links between ecological consequences, economic growth, limitation of resources and demographic evolution.
7 https://www.un.org/sustainabledevelopment
8 https://agenda-2030.fr
9 Already in 1972, Denis Meadows alerted us in the book The Limits to Growth, known under the name Meadows Report. This report supported by the Club of Rome, is one of the references of debates and reviews that relate to the links between ecological consequences, economic growth, limitation of resources and demographic evolution.
9 https://www.ecologique-solidaire.gouv.fr/strategie-nationale-bas-carbone-snb
Those Canadians who fought during the Second World War, what would they say and do if they saw the world today? Would they be happy to see us weep at their graves? They were men of action and one of these men, Garth Webb, had the vision of the JBC. At the time, he likely did not know the extent to which his initiative would be meaningful and necessary for younger generations and for friendship between nations. His vision is even more relevant today and the JBC must continue to walk in the footsteps of the soldiers of the Second World War in order to continue forging the roads of peace. The JBC has a place and a role along this road.

Fundamentally, the JBC is and will always remain a site of memory and history dedicated to future generations. Nevertheless, this mission serves as a bridge between many of the challenges of yesterday and those of today; between reflection on war and reflection on peace; between memory and environmental questions.

It is evident that we do not live in a world at peace when we live in a world where ecological balances are not respected (damage to biodiversity, imbalances in ecosystems, depletion of resources, etc.). Given the rate at which our planetary biotope is degrading, it is clear that tensions will increase on all fronts. It is therefore necessary to integrate an “energy-constrained” vision for the JBC for the short-, medium- and long-term. This means integrating the environment into the strategy of the museum, in order to become an actor of changes which follow the direction and commitments made by veterans in 1944.

In this age of environmental issues and sustainable development goals, it is clear that challenges to democracy, including those related to social and economic inequalities, are crucial and interconnected. The JBC offers a space for reflection on the intersection of these current issues because it sheds light on the threats to democracy before and during the Second World War. As global balances are threatened by new powers, memory also informs our frameworks for law and freedom. In this context, linking memory and sustainable development should not be an impossible mission, and the links between the two themes deserve attention and consideration (the place of the environment for peace in the world; a contribution to preserving the peace obtained by the sacrifices of so many; the tools to be developed to promote civic values, etc.).

Others have already begun this reflection in Canada. Canadian association Highway of Heroes is making its contribution with a program aiming to plant 2 million trees as a living homage to the men and women who fought for Canada in times of war, among whom 117,000 have fallen in the name of freedom:

"They have fought to protect our land and our freedom. It is now our collective duty to protect what they've fought for.“

The JBC’s Motivations

The threats to the environment also concern the JBC, which is exposed to global problems linked to human activity, global warming and rising water levels, and more recently, health concerns linked to environmental disruption. Today, the pandemic is the most immediate issue, but the environment may quickly become a major risk, for example with rising waters, increasingly frequent storms and floods or even international tensions related to oil which could prevent air travel. All these risks have long been identified by scientists. Environmental tensions are already present and we must anticipate the risks at all levels in order to reduce the shock.

In addition, there are local issues which threaten the environment surrounding the museum.

10 Tree-planting remembrance project in Canada. https://hohtribute.ca/bienvenue
Located by the sea, Courseulles has a port and is surrounded by lush greenery characteristic of Normandy. Since the 1970s, the balances between urbanization, economic and tourism development, well-being and nature have not always been respected. Numerous buildings have been built by the sea (a major scandal in the 1970s did little to stop the process), on the edge of the Seulles and inland, amid the disappearance of farms in Courseulles. When it was built in the early 2000s, even the JBC could have been just one more concrete structure if, in addition to high-quality content and architecture, the project had not promoted the restoration of the dunes and natural species and the protection of the seafront west of the port. It has since become a place of memory put into perspective by the dune setting that borders it, Juno Park.

This 12-hectare park surrounding the JBC constitutes a green space that the locals reclaimed when it was created in 2004 (the space was formerly exclusive to a campsite and its campers). This area, which came into being thanks to the construction of the JBC, corresponds to an innovative and visionary concept for the time, which still today is avant-garde, rare and unique on the Normandy Beaches. From the Sailors’ Cross at the port to the Croix de Lorraine, a pathway with educational displays allows visitors to discover the history of Courseulles, its biotope, its fishing practices, the fauna and flora of the dunes, etc. This park puts the JBC in perspective with content related to the German occupation and the D-Day Landings, by recalling the history of the site (formerly a German stronghold of the Atlantic Wall, featuring vestiges both uncovered and still buried in the sand). **Juno Park is a space with both a historical and tourist vocation and it also highlights the ecosystems and ecological interests of the peninsula and the dune, promoting respect for them.**

The JBC, however, has no control over the development of the peninsula on which it is located. The museum maintains control over a space defined by an emphyteutic lease covering the area on which it was built. As for Juno Park, it is the property of the City of Courseulles. Construction on the former industrial site that borders the museum and Juno Park, including Courseulles’ historic shipyards, became permissible in 2018, following the modification of the *plan local d’urbanisme* (PLU). This allowed for a real estate construction project along the coast (for some 70 apartments), leading to questions about the compatibility between development and modernity, values and the common good, and even the existence of the museum. During the last municipal election, this construction project became a major issue in the campaign, and today it has gained the attention of the new municipal team.

The crisis brought about by this real estate project - on a site where all favour an environmentally respectful approach - has created a risk for the JBC, resulting from a lack of vision and a rift with the coherent direction and values of both the museum and Juno Park.
In early 2020, the COVID-19 pandemic showed the JBC the extent to which it is dependent on certain environmental factors. The health crisis and the confinement period forced a complete halt to the museum’s activities and jeopardized the museum’s future, causing staff to ask questions as to the core of its activities.

Going forward, the JBC will need to take into account the warning signs of changes to our economy, to anticipate and adapt to new trends and new environmental tensions that will dictate the future of our activities. The crises related to climate, environment, health and economy are ones which we must try to integrate into our long-term plans. Inspired by *L’Economie bleue* (Gunter Pauli)\(^{11}\) and *L’Economie symbiotique* (Isabelle Delannoy)\(^{12}\), we propose a development focus formulated around the decarbonisation of the museum’s activities with an overall objective of carbon neutrality, modeled on the commitments made by France with the SNBC and at COP21.

### 3. The Cornerstone: The Greenhouse Gas Emissions Assessment

**The principle behind the greenhouse gas emissions (GHG) assessment**

Climate change is the result of actions impacting natural physical flows (like emitting high levels of pollution via planes or cars, for example). The more greenhouse gases emitted the more the planet heats up, bringing about drought, rising water levels, loss of biodiversity, etc. This is all tied to physics, and our activities at the JBC are no exception. When visitors come to the museum, their travels constitute physical flows (consumption of oil via planes, busses or cars, or electricity for those who take the train). When the JBC changes its temporary exhibitions, physical flows result from the transport of objects, structures, display creations, etc. Our interactive circuits consume electricity both in terms of production and use. The same can be said for the souvenirs sold in the boutique, made from base materials extracted from mines in China, India or African countries, which are first transformed in their country of origin, then sent to a second country for printing, and finally sent to the supplier who ultimately redirects the product to the museum.

"The essential objective of a *Bilan Carbone*® (carbon analysis) or Greenhouse Gas Emissions Assessment is to give an overall picture of an activity with an indicator that is not economic (euros or dollars), but rather physical (greenhouse gas emissions). This is therefore a kind of speedometer necessary to manage one’s activity in a world under energy constraint and in transition towards a "low carbon" economy (definition by *Carbone 4*\(^{13}\))."

Taking a closer look at the definition by *Carbone 4*, we see the link between physics, the GHG assessment and the JBC, and we begin to understand the need to undertake an analysis in order to obtain a snapshot of our emissions year after year. In this way, we can then modify our practices, and ensure that they are sustainable and virtuous for the environment and for future generations. The aim of the GHG assessment is to understand in order to take action and to undertake a gradual transformation towards a low carbon model.


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\(^{11}\) Reference book published several times, the most recent entitled *L’économie bleue 3.0*. An economist by training, Belgian manufacturer Gunter Pauli was inspired by nature to develop a sustainable economy based on the mobilization of local businesses, the use of local resources, and the recovery of waste (which becomes a source of profit by aiming for zero waste).

\(^{12}\) *L’Economie symbiotique*. Ed. Actes sud, 2017. An innovative analysis of the new modes of production and economic organization that have emerged over the past 50 years which shows that they form a single economy, and appear in a coherent and uncoordinated manner in the world. Reinstating human activities in the major cycles of the planet and coupling their productivity to the regeneration of ecosystems and social links, forms an economy that can be described as symbiotic.

\(^{13}\) *Carbone 4* is the first independent consulting firm in France specializing in low carbon strategy and adaptation to climate change. www.carbon4.com
Mentors

To assist in its desire to take action for the environment and bring weight to this work, the JBC approached the French association "The Shift Project" (The Shift). Created in 2010, The Shift is a think-tank and their objective is to mitigate climate change and reduce the economy’s dependence on fossil fuels. Thanks to The Shift, we were able to engage the museum in a strategy based on its carbon footprint and to start working on this assessment in a scientific, researched and controlled manner. The Shift enabled us to meet and discuss with 'Shifters' (enthusiasts who develop methodologies and support The Shift with these projects). Through this, we connected with a young business called KarbonChain which provided us with the BEGES methodology to undertake our GHG assessment. On the basis of this assessment, which was carried out for the year 2019, the JBC has identified the sectors emitting the highest levels of CO2 equivalent and as a result, will create an action plan to reduce its emissions.

In addition, there were discussions and contacts to help and guide us in our approach. Of note, the relationship with Jean-Marc Jancovici\textsuperscript{14}, president of The Shift Project, whose internet videos are sources of reflection and knowledge for the JBC, and who has begun to provide written support (e-mail exchanges) for our strategy. The JBC also approached and explained the strategy to scientists like Jean Jouzel\textsuperscript{15} in order to obtain support for the strategy and the thinking behind it. Jean Jouzel offered his support and advised us to contact a network of climatological scientists within the LSCE (Laboratoire des Sciences du Climat et de l’Environnement located at the Paris-Saclay research centre) who can guide us in our action. The JBC presented its GHG assessment to them, in particular François-Marie Bréon\textsuperscript{16}, in order to scientifically validate its strategy, base itself on solid foundations and validate the work carried out with The Shift. Jean Jouzel has also agreed to sponsor the JBC’s decarbonization and sustainable development project “in spirit”.

See Annex 4: Message of support and sponsorship

Finally, the JBC was inspired by numerous works by companies such as Carbone 4, the consulting company created by Jean-Marc Jancovici in 2007, to better understand and identify global issues and define the possible levers for action at various levels (from individual action to establishing a long-term strategic roadmap for the JBC).

This support will enable the JBC to avoid “greenwashing”, a pitfall that would reduce our actions to more symbolic gestures. It was important for us to find a guiding methodology that would allow us to articulate our strategy and to frame it within a global approach. For this, we have opted for a GHG assessment for our museum as the first step.

The link between carbon and Euros

For those involved in decarbonization, the GHG assessment is as important as an accounting balance sheet, to which entities like the JBC are beholden.

The carbon physically emitted by the museum is in large part tied to the euros earned and/or spent by the museum. It should be noted that the effects of the large quantities of CO2 emitted as a result of visitor transportation to the museum negates the revenue collected. The GHG assessment precisely informs the JBC’s responsibility in terms of the CO2 emissions of its visitors.

When the JBC spends euros to purchase merchandise to be sold in the boutique or installs new exhibitions, it emits CO2 during production and transportation. It is therefore also responsible for CO2 emissions in this regard and for all human activity with a carbon output. The JBC contributes to climate change in this way and is beginning to see the impact on its own operations and the impact on future generations.

\textsuperscript{14}Jean-Marc Jancovici is a French engineer, consultant and specialist in energy and the climate. Teacher, lecturer, author of books and freelance columnist, he is known for his work bringing awareness to and popularizing themes of energy and the climate, in particular on the subject of global warming of which he diagnoses. He is co-founder and partner of the consulting company of Carbone 4 and president and founder of The Shift Project.

\textsuperscript{15}Jean Jouzel is the Director of research at the CEA and a specialist for questions about global warming.

\textsuperscript{16}François-Marie Bréon is a physicist-climatologist at LSCE and author of the 5th report of the GIEC (Groupe d’experts Intergouvernemental sur l’évolution du Climat).
Making the link between euros/dollars and greenhouse gas emissions will enable the JBC to take concrete actions. Its ability to make choices will have an impact on how it functions, but also on the economy and its finances. In addition to decarbonizing, these choices will be advantageous in terms of saving money in the long or short term.

Calculating the JBC’s greenhouse gas emissions assessment

Methodology

Carbon calculation groups greenhouse gas emissions into three categories: scope 1 (direct emissions), scope 2 (indirect emissions associated with the consumption of electricity, heating and cooling) and scope 3 (other indirect emissions). The JBC’s GHG assessment integrates all three scopes. From a legislative perspective, businesses in France which are required to undertake a GHG assessment can base their analysis exclusively on scopes 1 and 2. Excluding scope 3 would, for example, permit a bank which makes so-called ‘grey’ investments (for oil products, for example) to exclude some of these major pollutants from its assessment. In the eyes of the law, such a business would be considered ‘green’ despite its harmful investments. The JBC wishes to avoid such ‘greenwashing’.

The results for 2019

The JBC’s GHG assessment for 2019 (the 75th anniversary of D-Day, which saw more than 100,000 visitors to the museum) revealed the following:

The JBC’s total emissions in 2019: **1096.4 tCO2e** (tons of CO2 equivalent). This figure can be divided as follows:

- Scope 1: 4.7 tCO2e
- Scope 2: 11 tCO2e
- Scope 3: 1080.7 tCO2e

If we were simply to follow the legal obligations of the first two scopes, we would be at 15.7 tCO2e versus 1096.4 tCO2e; a total that right away makes us more ‘green’. We must, however, include all three scopes if we want to be truly effective in our approach, and in fact, the JBC’s scope 3 total represents 81% of the museum’s emissions. Taking a closer look, 85% of this 81% is the result of one particular area: visitor and customer transportation. The second major area of scope 3 results from the purchase of products or services (16%).

In terms of priorities for the museum and its long-term strategy, these two areas are those on which the museum will focus its attention and will seek to collaborate with entities that can impact these results, for example regional players whose policies are seeking to reduce the greenhouse gas emissions of visitors to the Normandy Region.

The objectives

Having outlined the principles, it is necessary to establish a roadmap based on the objectives of the UN’s 2030 Agenda, COP21, the SNBC, and France’s sustainable development goals (SDGs). The aim is for carbon neutrality between now and 2050. To do so, we have established a reduction of **5% per year until 2050** as a base, which translates to the following objectives:

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<th>Projection for emission reduction</th>
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<tr>
<td>Scopes 1 2 3</td>
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<tr>
<td>Short term</td>
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<td>2019</td>
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<td>1096.4 tCO2e</td>
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To achieve these objectives, the JBC will put in place a scalable action plan per scope, for the short, medium and long term.

**Carbon sinks or negative emissions**

The GHG assessment – the veritable backbone for the JBC’s strategy – will be reported each year in order to monitor the progress of emission reduction, and must be undertaken in parallel with work towards the notion of carbon sinks.

As all activities cannot achieve net zero carbon emissions, we must seek to reduce our emissions as much as possible while at the same time seeking those so-called ‘negative’ emissions (carbon sinks) in order to have a balanced GHG assessment.

Carbone 4\(^\text{17}\) outlined the following three referential pillars for achieving carbon neutrality, called the ‘net zero initiative’:

- A- Reducing my greenhouse gas emissions
- B- Reducing the emissions of others
- C- Increasing carbon sinks

The JBC will therefore endeavour to take into account negative emissions within its own methodology.

The JBC’s approach to decarbonisation is embedded into the CSR of the museum, for which the rationale and actions are in line with goal 13 of the UN’s Sustainable Development Goals to transform the world by 2030.

13. Take urgent action to combat climate change and its impacts

13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

This issue was also taken up by the French government within the proposals and commitments among French stakeholders, framed around 6 issues – **issue #2**

Transform society models by implementing low carbon strategies and conserving natural resources, to act for the climate, planet and its biodiversity

4. **Environmental and Social Propositions and Engagements**

Contributing to the development of sustainable tourism involves both economic and social considerations. A sustainable approach can target the museum’s CO2 emissions but also other areas, such as the diversity of employees, the quality of the dialogue within the organization, transparency in terms of remuneration, or gender parity. It also takes into consideration the entire museum environment or its “social ecosystem”. The questions that should be taken into consideration include: From whom do we make purchases? How do our suppliers treat their employees? While we may not have the capacity to look deeply into all aspects, asking these basic questions must become part of our best practices.

Below is the start of a list of measures. It includes actions to put into place in the short-term, investments to be considered over the medium-term, and policies to be developed and structured over the long-term in regards to the management of the museum.

Reducing the direct environmental footprint

The first museum in Normandy committed to a decarbonisation strategy

In order to participate in the fight against climate change, the JBC is giving itself an **objective of reducing its greenhouse gas emissions by 5% per year from now until 2050**. The goal is to become the first museum in Normandy to achieve carbon neutrality for the whole of its operational sphere (including business travel, employee travel from home to work, and visitor travel).

Using the GHG assessment undertaken in 2019 as a base, the JBC was able to identify the main sectors emitting greenhouse gasses, and will be able to plan for modified practices year after year, in order to diminish these emissions. **The idea is to undertake concrete changes gradually over time as they are identified and as the need arises in terms of new materials and equipment, knowing that it is not realistic to immediately carry out all changes.**

- Establish an ambitions roadmap based on the GHG emissions assessment in order to decarbonise our activity
- Monetize CO2 emission monitoring

**Encouraging employees to adopt eco-responsible behaviours by putting in place zero cost good practices**

- **Saving energy**: energy saving setting of the heating and cooling system; turning off the lights for rooms not in use
- **Limiting pollution and waste**: limiting printing; recycled paper towels instead of hot air for hand drying; recycling (electronic and electric items, batteries, ink cartridges, paper, glass, plastic and cork stoppers...); reusing materials (scrap paper, wood, metal...) for projects and works; limited use of office supplies (one set per year); carpooling and limiting travel; requesting participation of vendors (vending machines with paper cups); eliminating shopping bags in the boutique; privileging the coffee machine over individual doses; reusable coffee filters; purchasing in large quantities or in bulk...

**Studying and putting in place measures requiring costs or investments**

- Lighting: motion-activated sensors; timers for overnight lighting (1:00 a.m. – 6:00 a.m.); LED bulbs
- Recycling bin in the hall of the museum and in Juno Park
- A rainwater recovery system for non-potable use or for the washrooms
- Installing planters on the terrace and/or beehives for Juno Honey
- Adapting and evolving sources of heating and cooling: Heating with solar or wind power or even a tidal system; production of electricity by photovoltaics; low-heat radiators

**Improving energy performance** *(The best energy is that which we do not consume)*

- Collaborating with service providers for heating and air conditioning to optimize/ improve/ reflect
- Undertake work to improve the building’s energy efficiency
- Identify and avoid digital pollution (excess emails, storage, multiple copies of files)

The JBC's approach to decarbonisation is embedded into the CSR of the museum, for which the rationale and actions are in line with goal 12 of the UN's Sustainable Development Goals to transform the world by 2030.
12. Ensure sustainable consumption and production patterns
-12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse
-12.b Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products

This issue was also taken up by the French government within the proposals and commitments among French stakeholders, framed around 6 issues – issue #2 Transform society models by implementing low carbon strategies and conserving natural resources, to act for the climate, planet and its biodiversity

**Take up the challenges tied to visitor travel**

Nearly 81% of the JBC's carbon footprint is tied to visitor travel. The JBC does not bear all responsibility in this regard, but it can seek to understand and take action by:

- identifying visitors’ modes of transport by taking regular surveys and putting in place various measures to limit certain modes and privilege others
- working with transportation companies to make changes to the offers, based on identified needs
- seeking partnerships ahead of visits to the museum (electric vehicle rental, bike paths)
- carrying out carbon offsets, in particular by protecting surrounding fragile environments (creating carbon sinks by planting trees and vegetation that are respectful of the dunes).

**Promoting a circular economy**

- Research and promote circular economy initiatives (local processing of cardboard boxes and plastics used by the JBC and others, such as "precious plastic" / permaculture sector for the treatment of plant waste, including those from future food services (see the description of this project in part 5).
- Encourage temporary exhibition furnishings which can be recycled or reused
- Review the sourcing of local suppliers in order to reduce greenhouse gas emissions (including the boutique and future food services)
- Partnerships for purchases (for example local flax producers) and also encourage suppliers to present products that are more respectful of the environment

**Making a commitment for visitors**

Invested in the mission of transmission of memory, the JBC is guided by the principle that all are welcome and an approach that consists of presenting visitors with an offer that is simple, clear, educational and responsible at a reasonable cost.

**Guaranteeing physical and digital access to museum contents**

- **A welcome for all**: 103,000 visitors in 2019; various nationalities; adapted to persons with disabilities
- **A bilingual (French and English) offer for all**: Permanent and temporary exhibitions; ‘Explore Juno’ circuit for families with digital and physical modules; ‘Explore Juno’ circuit for primary and secondary students; ‘Webb Visit’ app with content translated to German and Dutch; guided visits of Juno Park (bunkers and the beach in front of the museum)
- **Digital access**: Highly developed and efficient website which acts as a complement and extension of the museum. Ensuring it uses less energy and includes a virtual tour of the museum that respects the interests of visitors, the JBC and the environment (seeking a balance).
Promoting high quality, ethical customer relationships

- Welcome and presentation by young Canadian guides
- Qualité Tourisme label in France
- Working collaboratively with the network local and regional tourism institutions

Creating and offering a range of responsible content, programs and services

- Design content that promotes visitor engagement
- Content with a positive impact on major issues facing our society
- Eco-responsible actions to be undertaken in a joint manner with our visitors (recycling, limiting pollution)
- Proposing ethical boutique offers

Making a commitment for employees

The JBC places its employees at the centre of its strategy for transformation, as they are both central actors and beneficiaries. The strategy favours listening to and considering everyone, and promoting increasing skills and responsibility.

Supporting employee mobility and training: 30 days of training in 2019; 2 to 3 paid interns per year; assistance for the arrival and integration of Canadian employees by providing accommodations, assistance in obtaining visas and residence permits; participation in the apprenticeship contract system; welcoming Service civique interns.

- Promote a healthy work environment and the well-being of employees: One manager dedicated to the guide team (supervision, training and support); the option to work from home 2 days per week
- Ensure equal opportunities in terms of recruitment, career path and promotions: permanent staff members are French and Canadians

Questions pertaining to the integration of employees with disabilities and gender parity have been identified and are still being studied, as are questions about welcoming employees who are new to the work force.

The JBC’s approach to decarbonisation is embedded into the CSR of the museum, for which the rationale and actions are in line with goal 4 of the UN’s Sustainable Development Goals to transform the world by 2030.

4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture’s contribution to sustainable development

This issue was also taken up by the French government within the proposals and commitments among French stakeholders, framed around 6 issues – issue #3 Focus on lifelong education and training to change behaviour and lifestyles that are adapted to our future world and sustainable development challenges.
5. **Sustainable Development at the Heart of the JBC's Renovation and Expansion Projects**

In the lead-up to 2024, the JBC wishes to undertake a three-fold project which respects the sustainable development objectives highlighted above, and take advantage of this opportunity to increase the museum's carbon sinks in a circular fashion

- Update to the room about Canada Today
- An environmentally friendly option for food services
- Low-carbon boutique expansion project

The project is about seizing the opportunity to both anchor the ecological transition into the daily life of the museum and its services to visitors, and to become a window onto how a museum can move towards virtuous models of scenography, food options, and sales.

As the museum welcomes international visitors and is a showcase for Canada in France, this sustainable orientation offers the opportunity to raise awareness of the need for the ecological transition of the economy and of society.

**Update to the room on Canada Today**

Approximately 80% of the museum’s displays are dedicated to history and memory. The final room on the theme of Canada Today (a society which veterans contributed to creating) in and of itself offers visitors the possibility to reflect on citizenship in the present day as they complete their visit to the museum. In order to update this room which dates to 2003, the JBC has defined a project with content and scenography on themes reflecting modern Canada, veterans from post-Second World War conflicts, and multiculturalism.

When this project comes to life, integrating a sustainable approach (choice of materials and technology, etc.) will be necessary.

**An environmentally-friendly option for food services**

As an extension to this room, the JBC plans to create a space for food services in order to respond to the needs of increasing numbers of visitors and to extend the on-site experience.

An environmentally friendly approach must be integrated from the outset of the project: local farmers; seasonal options; organic products from local farmers; suppliers who offer biodegradable materials and who can deliver only as needed in order to reduce emissions and waste; portions adapted to the needs of customers, etc.

A number of circular initiatives can be envisaged for this kind of project, in order to link carbon sinks with local social projects, enable innovation and creativity, and stand out compared to other food service options in the sector. These include: installing water-saving devices; favouring eco-friendly furnishings and utensils (recycled or ecological materials in order to avoid plastic and Styrofoam as much as possible); reusing furniture or using noble and durable materials such as wood and LED lighting; energy efficient equipment with low consumption for lighting, air conditioning, ventilation, refrigeration, cooking; using cleaning products without chemical components; a trained and informed staff.

This project is currently under development but will benefit from having an eco-responsible orientation from the outset. As such, it will be easier to put in place and will bring opportunities for the JBC in terms of partnerships and funding.
A low-carbon boutique expansion project

The JBC envisages rounding out these projects with an expansion of the boutique, which is now too small to serve as both a point of sale and ticketing office for the museum. A sustainable and environmentally-friendly approach can also be incorporated, focusing on two major directions which will have already adopted for managing the current boutique:

- Promoting low-carbon products all the while maintaining a viable economic approach
- Switching from a three-pronged offer (low / mid-range / high-end) to a binary product offer (high carbon emitting vs low carbon emitting products) so that the customer can make a choice whether to commit to the environment or not.

The expansion is also a means to improve the visitor experience by offering a more comfortable and spacious boutique. For the museum, this is an opportunity to offer products that more valued and are more valuable.

A reflection on a “third space” or “open source” space

In parallel to the above-mentioned projects, the opportunity to develop a “third space” in the museum’s multipurpose room or the food services space will be studied.

The third space, also called a shared and collaborative workspace where creativity can grow, is one which responds to the economic difficulties that entrepreneurs may face.

There are many types of third spaces: collaborative activities and services to promote ‘demobility’ and offer an alternative to solo work; artisanal space to develop do-it-yourself skills and know-how; educational space for pedagogical innovation connecting the educational world and the business market.

In Colombelles near Caen, the mayor (a history teacher) fostered the creation of Wip, a third space dedicated to “Memory and History”. The Wip manages a network of third spaces to facilitate exchange and cooperation, creating co-designed initiatives adapted to projects with new work modes which break down boundaries and are thus in line with the needs of the region. The Wip also advises project leaders and communities.

Taking a closer look, the JBC's multipurpose room already meets certain criteria of a third space. It would also be interesting to see how the food services project can lend itself to this kind of concept which currently has a lot of support from local leaders, given its ability to energize the economy and create social ties.

A third space at the JBC would follow the momentum generated by the museum as a multi-use space founded on the concepts of sharing, exchange and openness and linked to its local surroundings.

6. Areas of Reflection for a Collaborative and Collective Territorial Project

Being a force for the evolving economic model

Tourism is one of many activities contributing to economic development that is confronted with the challenge of sustainability. Within the tourism sector, the JBC functions with an annual budget of 1 million euros for its operations and investments. It is financed by ticket and boutique sales and for the first time in 2019, these revenues enabled the museum to cover 100% of the operational costs. Its investments and overhead costs in Canada are financed through fundraising and the support of the Government of Canada.

As we have seen, leading up to 2024, the museum has outlined a project to upgrade the room about Canada Today, coupled with an expansion of the boutique and a food services project.

18 https://coop.tierslieux.net/tiers-lieux/typologies-definition/
19 https://www.le-wip.com/
The pandemic caused a decline in museum visits and fundraising revenue. The situation it created was completely unprecedented, with first a complete halt and then a severe downturn in operations. This situation led to questions about the museum’s ability to sustain its activities within this environment. The pandemic made evident the need to re-examine the economic model in which we function in order to sustain this mission focused on memory for the longer term and guarantee the survival of the institution.

The JBC’s plan to decarbonize is the backbone of its roadmap, and the compass which will motivate the Board of Directors and staff to study and put in place a new approach with new objectives, and an adapted/modified Projet Scientifique et Culturel which will include sustainability. Its aim is to address the numerous questions being asked at the JBC: how to reduce overhead costs; how to attract visitors (new but not necessarily from abroad, given the worrisome situation with the pandemic, and the economic and environmental context); how to participate in an economy that is evolving and change in an original way? How can we base our forthcoming strategy within the criteria of the CSR and the Environment, Social and Governance (ESG)?

Beyond all that the JBC can initiate on its own, it is evident that its objectives and actions will be limited if they are not in line with sustainable and ambitious regional projects. The JBC is therefore seeking to go beyond its own institutional limits and to work with others in order to become more sustainable and socially virtuous. It also seeks to contribute to changing mentalities and constructing a more sustainable world for future generations.

For its low-carbon strategy, the JBC wishes to see its actions combine with those at the levels of the region, department, France, Europe and Canada. At each of these levels, partnerships can be researched and envisioned. Areas of reflection, which may lead to development and jobs, need to be studied alongside other actors.

The JBC and the City of Courseulles

In the event that the real estate project next to the JBC/ Juno Park is cancelled and a solution for a common good is sought, the JBC is advancing the idea for an environmental hub along the port of Courseulles-sur-Mer, knowing that the city is committing to a rehabilitation/repurposing project for the Maison de la Mer on the theme of wind power for this same sector around the port entrance.

This proposal aims to figure within the global reflection of the city, which seeks to reconcile sustainable tourism, memory and environment in order to establish a project to be carried out by different groups. This is an opportunity to be a pioneer on many levels, and to be a real showcase for good practices.

See Annex 5

Participation in a university study

As part of its reflection on ways to develop sustainable tourism, the JBC responded favourably to participating in a research project under the leadership of Xavier Michel, a lecturer in human geography at the University of Caen. In June 2020, this project was part of the program, Les futurs des mondes du littoral et de la mer (“Futures of the coastal and sea worlds”) of the Fondation de France. Project title: D-Day Climate Change - Remembrance tourism and the effects of climate change: analysis of practices and representations of the Landing Beaches).

By participating in this project, among other things, the JBC is keen to see the creation of tools to better protect memory sites along the coast from private real estate interests. This falls under the first theme of the program: Anticiper et s'adapter aux conséquences du changement climatique (“Anticipating and adapting to the consequences of climate change”).

The JBC and the surrounding region
Located at the heart of an historic Canadian D-Day Landing sector, the JBC has been part of the Cœur de Nacre sector since 2016. As such, during the 75th anniversary of D-Day in 2019, the JBC was a major player in the creation of a larger remembrance tourism project. It had the opportunity to collaborate with the Terres de Nacre Tourism Office as well as seven towns for the conception, creation and funding of an outdoor exhibit comprised of seven kiosks and an app. The whole of this project became a common thread for discovering the history of the Landings and the stories of the soldiers and civilians who witnessed the events.

Through this collaboration, which brought together the skills of local contractors and service providers, the JBC sought to demonstrate its ability to contribute to a reflection and touristic undertaking across the sector, through a synergy highlighting its strengths and resources in the realm of tourism.

In future, other collaborations might include:

- Privileging initiatives and partnerships that promote more sustainable tourism. The museum would be implicated from the start with a approach supported by public policies (which would bring visitors to the museum using bikes or electric cars, for example)
- Marketing guided by the criteria of sustainable tourism in order to capture the attention of visitors who are already attuned to this issue
- Researching labels/certifications/designations (Green Globe 21, the international label designating sustainable tourism[^21]; assistance for Blue Flag, the international environmental and tourism designation for beaches and marinas which Courseulles lost in 2019)?
- Participating in brainstorming on: Tidal-sourced energy techniques; permaculture in order to locally supply the new food services spot; reusing certain local recyclables which could be transformed into products for the boutique (cork magnets); reating clothing items for the JBC made from flax cultivated in the region; a touristic bike route, etc.

In France, communities, companies, unions, the state, higher education and research institutions, NGOs and associations, and parliamentarians all contribute to realizing the sustainable development goals established by France, along with individual citizens and the media. This necessitates a collaborative environment, as the 2030 Agenda is the business of all and requires everyone take action. The JBC is no exception.

The JBC’s approach to decarbonisation is embedded into the CSR of the museum, for which the rationale and actions are in line with several of the UN’s Sustainable Development Goals to transform the world by 2030.

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<th>4</th>
<th>Quality Education</th>
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<td>4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all</td>
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<tr>
<td>4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture’s contribution to sustainable development</td>
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<tr>
<th>8</th>
<th>Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</th>
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<tr>
<td>8.9 By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products</td>
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11. Make cities and human settlements inclusive, safe, resilient and sustainable
11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries
11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage
11.a Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning

12. Ensure sustainable consumption and production patterns
-12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse
-12.b Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products

13. Take urgent action to combat climate change and its impacts
13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

These issues were also taken up by the French government within the proposals and commitments among French stakeholders, framed around 6 issues = **issues #2 and #3** mentioned above and **issue #5** Make citizen participation effective to achieve SDGs, and truly transform practices by increasing trial projects and local innovation.

This implies involving citizens from the conception of public policies and throughout their implementation, in order to improve public decision-making and make it sustainable.

7. **Calendar**

The various endeavours that will enable the JBC to improve its GHG assessment, implement virtuous practices, and seek partnerships and investments are all components of a work plan. At this stage, the JBC proposes the following plan:
- Sept-Oct 2020
  - Finalizing the GHG assessment
  - Establishing the areas of improvement and the short-, medium- and long-term goals
  - Defining the JBC’s environmental roadmap
  - Dividing zero-cost work/responsibilities among the JBC team
  - Presenting the JBC’s strategy to local, regional or even national institutions

- Nov 2020
  - Integrating the environmental roadmap into the action plan and budget for 2021 and have it validated by the Canadian Board of Directors
  - Identifying the investment needs for the medium- and long-term
  - Presenting the plan to the media

- Early 2021
  - Adopting changes to the JBC’s practices, based on the roadmap
  - Technical studies regarding major areas of investment
  - Completing the 2020 GHG assessment and making comparisons between 2019 and 2020
  - Reviewing the roadmap

- Throughout 2021
  - Establishing a council of advisors with gender parity
  - Seeking partnerships and investments
  - Following-up on the evolution of indicators and objectives established throughout the year
  - Checking the relevance of the indicators
  - Comparisons and controls via The Shift and various contacts within the scientific community

- End of 2021
  - Undertaking the GHG assessment in order to make comparisons
  - Defining new carbon objectives for 2022
8. Conclusion: A Call to Take Action Together

The JBC is not simply seeking to sing the praises of ecological and environmental thinking. The core of its mission is and always will consist of being a Canadian site of memory. This is not, however, incompatible with being a better actor in sustainable tourism.

The JBC’s approach to sustainable tourism and eco-responsibility is a new component of the museum’s Projet Scientifique et Culturel and strategic plan. Gradual adjustments will be necessary for this project to move forward but there is a clear direction: “Taking action to contribute to creating real change”. Centring this approach around the calculation of greenhouse gas emissions and using the calculation as a guide will help avoid unending discussions around questions like, “this works in theory by how does it work in practice?”. This focus will give direction to the museum’s extension projects (food services and boutique) and may encourage a global project for the sector (an environmental hub at the entrance of the port/ an alternative to the real estate project).

Specialists in environmental issues support the JBC’s approach and see it as an opportunity to work with actors in the field to find real solutions. In the important tourism sector in Normandy which is part of the economics of remembrance tourism (nearly 5 million visitors per year and upwards of 6 million during major anniversary years), remembrance tourism is a main draw for Normandy, representing more than 30% of the visits to the region. The JBC’s approach can make a major difference in future, bringing awareness to good practices and democratizing them within similar institutions.

The JBC proposes to position itself as a catalyst and to foster a collective environment which the public wants to see when it comes to a sustainable and ambitious project for the territory.

This cooperation will maximize the chances of succeeding for potential future Requests for Project proposals related to ecological transitions.

To undertake its sustainable development strategy, the JBC will make available certain resources and seek scientific, economic, tourist and political partnerships. Knowing that Cœur de Nacre has for a long time been moving in the direction of sustainable development, if a virtuous synergy were to be created with the JBC, Cœur de Nacre could become the first sustainable development destination in Normandy, and the JBC the first sustainable museum.
ANNEX 1: Corporate Social Responsibility and Environmental, Social, and Governance Criteria

Corporate Social Responsibility (CSR) consists of integrating environmental and social issues into the operation of the company as well as into its products and services.

Practicing CSR means the company strives to have a positive impact on society and the environment, while remaining economically viable. An organization will seek to achieve these two objectives with the help of its employees, customers, suppliers, shareholders and public authorities.

This may imply a profound rethinking of its economic model to make it compatible, for example, with the fight against climate change (the limitation of global temperature rise to 2°C) or the sustainable management of resources (the safeguarding of biodiversity).

Environmental, social, and governance (ESG) criteria are an increasingly popular means for investors to evaluate companies or causes whose values match their own, and in which they might want to invest. A concept closely linked to CSR, ESGs are a set of standards that allow an extra-financial analysis of a company to screen potential investments within three categories: Environmental, Social and Governance:

- Environmental criteria examine how a company performs as a steward of the natural environment (energy use, emissions, waste management, pollution, natural resource conservation, for example)
- Social criteria assess how a company manages relationships with employees, customers, suppliers, and the communities in which it operates (the prevention of accidents and risks, psychosocial factors, staff training, respect for employee rights, and the quality of social dialogue, for example)
- Governance criteria consider the leadership, executive compensation, internal controls, and shareholder rights of a company (the independence of the board of directors,)

Added to a purely financial assessment, these criteria provide an alternate perspective on a company’s strategy for the investor. These ESG criteria are at the heart of Socially Responsible Investing (SRI), thus ensuring alignment between research, performance and competent investiture.

ANNEX 2: France’s national low-carbon strategy (SNBC)

1. What is the national low-carbon strategy in France?

The national low-carbon strategy (SNBC) is the roadmap for France to reduce its greenhouse gas emissions. It includes:

- a long-term objective: carbon neutrality
- a path to achieve it;
- 45 actions covering governance at the national and territorial levels, all sectors of activity (carbon footprint, investments, regional planning, R&D, education and formation).

It defines the framework for initiating low-carbon transition in France from today. Public decision-makers must take it into account.
2. What is the goal?

France's long-term ambition is carbon neutrality by 2050. This means that national greenhouse gas emissions must be less than or equal to the quantities of greenhouse gases absorbed on French territory by ecosystems managed by humans (forests, meadows, soils, etc.) and certain industrial processes (the capture and storage or reuse of carbon). The aim is also to reduce the carbon footprint caused by the consumption of resources by the French, which includes imported goods.

3. What about in the short-term?

SNBC sets emission ceilings for greenhouse gases in the short- and medium-terms: these are called carbon budgets. They are set for five-year periods and are expressed as the equivalent in millions of tonnes of CO2. Current carbon budgets cover the period 2019-2033.

4. What is the status today?

In 2018, France reduced its emissions by 19% compared to 1990, excluding the land and forests sectors, despite an increase in population. The level of emissions per capita is one of the lowest among developed countries. However, between 2015-2018, the first carbon budget was exceeded. Action must therefore be increased to put France on the right path.

5. How was the strategy developed?

Established through the Energy Transition Law for Green Growth in 2015, the strategy is the result of broad consultations with stakeholders (companies, associations, unions, consumer representatives, parliamentarians, local authorities) and the public. Consultations took place during the development phase and on the final draft of the strategy.

6. SNBC Objective 1: Decarbonize energy production

Achieving this objective requires reliance on only the following energy sources: biomass resources (waste agriculture and wood products, wood energy), heat from the environment (geothermal energy, heat pumps, etc.) and low-carbon electricity.

7. SNBC Objective 2: Halve energy consumption

Reduction of consumption energy in all sectors (transport, construction, etc.) requires substantially strengthening energy efficiency and the performance of equipment, developing lifestyles and habits that require less energy consumption, and promoting a more circular economy. The consumption trends must evolve and this can be done without the loss of comfort for the French people.

8. SNBC Objective 3: Reduce emissions not related to energy

This objective refers to the reduction of emissions from agriculture and industrial processes that do not depend on the consumption of energy. This requires in particular the transformation of agricultural practices by further developing agroecology, agroforestry and agriculture of precision, and shifting food consumption practices towards more local and better quality products.

9. SNBC Objective 4: Increase carbon sinks

By 2050, a certain level of carbon emissions is inevitable, especially in sectors not reliant on energy (agriculture and industry). Achieving carbon neutrality means strengthening natural carbon sinks (forests, woodlands and agricultural land) and further developing carbon capture and storage technology.

10. Horizon 2050
Transport: zero emissions (except domestic air transport)
Construction: zero emissions
Agriculture: 46% reduction of greenhouse gas emissions compared to 2015
Industry: 81% reduction of greenhouse gas emissions compared to 2015
Energy production: zero emissions
Waste: 66% reduction of greenhouse gas emissions compared to 2015

ANNEX 3: Understanding the Greenhouse Gas (GHG) Emissions Report

It is important to understand the value of taking stock of the emissions the JBC produces. The essential objective of a Bilan Carbone ® or Greenhouse Gas Emissions Report (GHG report) is to give an overall picture of activity with an indicator that is not economic (euros or dollars), but physical (greenhouse gas emissions). The GHG Report is a type of speedometer necessary to shift activity in the current energy-constrained world to activity that supports a “low carbon” economy.

Why count greenhouse gas emissions?

The GHG report is an expanded inventory of the GHG emissions of an activity. In practice, it corresponds to the sum of emissions linked to the activity of a company.

The accounting for GHG emissions generated by the activities of companies is now standardized, after ten years of existence. This exercise has many benefits for a company, including an enhanced public reputation, increased interest from investors, identifying previously unknown risks, motivating staff, encouraging innovation, and reinforcing extra-financial reporting.

Carbon accounting is a means of measuring the direct and indirect emissions to the Earth’s biosphere of carbon dioxide and equivalent gases from industrial activity. Carbon accounting classifies greenhouse gas emissions into three groups:

- Scope 1 - direct emissions
- Scope 2 - indirect emissions associated with electricity consumption, heating and cooling
- Scope 3 - other indirect emissions

ANNEX 4: Carbon regulations in France

There are currently two carbon regulations in France.

1) Article 75 of the Environment Code
Pertaining to:
French companies or French subsidiaries of foreign companies with more than 500 employees and/or Communities of more than 50,000 inhabitants, the State, regions, departments, urban communities and urban communities.

The obligation:
Publish a reporting of scope 1 and 2 (mandatory) and scope 3 (voluntary) emissions for year n and the reference year + action plan. The regulatory report must be filed on the ADEME website (bilans-ges.ademe.fr) every 4 years.

Controls:
The performance of the exercise is controlled by DREAL and the penalty for non-compliance is € 1,500.

2) Article 225 of the Commercial Code

Pertaining to:
Listed companies; French companies or French subsidiaries of foreign companies with more than 500 employees and whose balance sheet or turnover > € 100M.

The obligation:
Annually publish in the management report a sub-report of "significant items of direct and indirect greenhouse gas emissions, across the entire value chain of the company, that is to say, including upstream and the endorsement of its activity".

Controls:
- Mandatory monitoring of the report by independent third parties (auditors) accredited by COFRAC
- Filing of the report at the commercial court registry and on the company’s website

ANNEX 5: A New Challenge for the Coastal Area in Courseulles-sur-Mer – Committing the Juno Beach Centre to a Future with Sustainable and Eco-Responsible Tourism

REFLECTING ON THE PAST FOR THE FUTURE

As an actor dedicated to multiple missions across its territory (memory, education, citizenship, the economy, etc.) and with a role to play in today's society, the JBC wishes to participate in a reflection on the issues and the potential of sustainable tourism across its territory, particularly in Courseulles. It also seeks be a proactive force in creating a project that is comprehensive in focus, coherent, and advantageous for the City of Courseulles and for its own interests, as well as those of locals and the environment. This connects to the museum’s own strategy for sustainable tourism, which also involves anticipating the future.

Assessment

The sector – spanning some thousands of square metres in size and located on either side of mouth of the Seulles river which delineates the eastern and western banks of the city's seafront – is full of promise.

A world-class museum geared towards sustainable and eco-responsible tourism
Located on the Anglo-Canadian D-Day Landing Beach, the Juno Beach Centre (JBC) - the Canadian museum on the Landing Beaches in Normandy - was born in 2003 out of the shared vision of a mayor of Courseulles-sur-Mer and of a Canadian veteran: establishing a museum dedicated to the memory of the role played by Canadians during the Second World War. Over the past 17 years, the JBC has become a key destination for Franco-Canadian remembrance tourism; a place of history, commemoration and education. Its window onto Canada today creates a dynamic site anchored in the present, and an evolving tool that promotes civic reflection on the world around us. The JBC looks back on yesterday to help us understand today and contribute to preparing for tomorrow. In 2019, the JBC welcomed 103,000 visitors, among whom nearly 25% were under the age of 18.

That same year, the museum began a reflection on sustainable and eco-responsible tourism, in view of respecting the ecological balances of the peninsula on which it is located and more broadly, out of a desire to be part of a transition towards more sustainable tourism.

Trends in the tourism industry related to the environment had started to emerge before the pandemic and we can anticipate deep structural changes still to come. The JBC has outlined a strategy wherein actions related to sustainable development are integrated into the operations of the museum and its activities, including promotion, marketing, partnerships, etc.

**Juno Park: An exceptional but undervalued site**

The 12 hectares of Juno Park which surround the JBC are a green space which Courseulles’ residents reclaimed in 2004 when the site was rehabilitated (the space was formerly exclusive to a campsite and its campers). This area, which came into being thanks to the construction of the JBC, corresponds to an innovative and visionary concept for the time, which still today is avant-garde, rare and even unique for the Normandy Beaches. From the Sailors’ Cross at the port to the Croix de Lorraine, a pathway with educational displays allows visitors to discover key touristic features of Courseulles, including the history of the Second World War, as well as the fauna and flora of the dune area, its biotope, fishing practices, etc. This park recalls the history of the site (formerly a German stronghold of the Atlantic Wall, featuring vestiges both uncovered and still buried in the sand). Juno Park is a space with both a historical and tourist vocation and it also highlights the ecosystems and ecological interests of the peninsula and the dune, promoting respect for them.

Yet, the park has never received proper recognition for the quality of its content, and has always been placed at the same level as the Parc de l'Edit and Champs des Oiseaux parks, both of which are superb areas within the city, but lack the same educational and touristic potential. Over the past few years, Juno Park even faced gradual abandon due to lack of maintenance by the city (degradation of the didactic panels and modules and the greenery).

**The site of the former CNR (Chantiers normands réunis)**

At one time, on the area where the JBC and Juno Park are located today, Courseulles featured an industrial and maritime heritage with a former shipyard. Following a long legal saga which left the site esthetically unpleasing, dangerous and abandoned, the previous municipal authority issued a construction permit for a real estate project containing some 70 apartments (la Résidence des Dunes) at the location of this site. There was consensus about the necessity to demolish the former naval yard. However, the four-floor construction project, which neighbours the JBC and Juno Park, caused an outcry from supporters advocating respect for the memory of the Canadian sacrifices of 1944 and an extension of the visionary creation that is the Canadian interpretation centre. At a moment in time when the young generations urge us not to continue making the same mistakes as in the past (excessive concrete constructions, destruction of ecosystems, disrespect of fragile environments, etc.), those in favour of respecting ecological balances are also opposed to the real estate project.

The municipality is currently reflecting on withdrawing this project, which would make room for a project that is more respectful of the balance between development, modernism and values, common good, and the very existence of the museum.
The former *Maison de la Mer*

To the east of the port is the *Maison de la Mer*, a former aquarium which closed its doors during the mid-2000s. The City of Courseulles is working on a rehabilitation/re-adaptation project for this establishment on the subject of wind power. Reinvigorating this unique seaside space is important for the attractiveness of the city.

It can be added to this list of the city's major assets, which includes:

- **The port** (fishing and leisure) and its activity tied by nature to the sea and environmental challenges
- **The Sailing School**
- **The Société nationale de sauvetage en mer (SNSM)** (maritime rescue)
- **The beach**
- **Services and activities** which enabled the city to be classed *Station de Tourisme* in 2017

**Vision for the creation of an environmental hub**

If the real estate project bordering the JBC and Juno Park is abandoned and other solutions for the common good are sought, the JBC is proposing the idea of an environmental hub to federate the west and east sides of the entrance to the port in Courseulles-sur-Mer. This proposition is put forth in order to participate in the city's larger reflection for reconciling sustainable tourism, memory and environment within a framework favouring the implementation of projects to be carried out by various groups of actors.

Within each of these ideas for structuring initiatives is a potential for collaboration between the City of Courseulles and its Canadian museum.

**A valorization of Juno Park**

Valorizing Juno Park requires that the city and its inhabitants better understand the quality of this site, its educational potential, its originality, and its compatibility with sustainable development goals. *This park adheres to a sustainable tourism approach, promoting a natural and historical heritage. It also encourages reflection on the protection of fragile environments.*

**A pedestrian footbridge**

This footbridge is a project dating back to the creation of the JBC. Like many locals, the JBC has always favoured its creation. Cast aside for nearly 15 years, the project was reactivated in 2018 with the real estate project. Even though financial support from the JBC was requested (the JBC had accepted to contribute up to 150 000 €), it seems that no file was ever created to be submitted to the authorities or potential financiers. *In the context of the creation of a more comprehensive project, the construction of the footbridge merits additional study in light of sustainable development and the opportunities therein.*

**Restoring the *Maison de la Mer* to bring coherence to site**

The *Maison de la Mer* could become the scientific base which would bring coherence to the sector and address the challenges tied to the site as a whole. Imagine a centre dedicated to biodiversity/ the environment/ the seaside or even a centre dedicated to the ecological transition, sustainable tourism or the climate. A site for learning and/or play, offering an amalgamation of all the riches this area of the city has to bring, aligns with a visionary and pedagogical approach promoting the environment. In such a location, wind power would find its place alongside other content related to energy transition. A reflection could be undertaken with the *CPIE*, or the Gilbert Boulanger School and/or a municipal youth council which could support the project.
A "Dunes Park"

In light of such an ensemble of projects, the future project for the former CNR site could support, enrich and complete a comprehensive framework comprised of history and memory, tied to the D-Day Landings and the men who sacrificed themselves. At a minimum, it is imperative that the values that drove these men in 1944 are respected, perpetuated and adapted to the challenges of today. Linking memory and environment should not be an impossible mission, as the bridges between these two themes are the same as those that connect the JBC to environmental questions: the common denominator is peace. Furthermore, there exists already a dedicated public space that perfectly ties the two themes: Juno Park and its contents related to history and biodiversity.

One option could be the construction of carbon sinks around the JBC and on the peninsula by planting trees or high carboniferous vegetation. Each planting could be associated with the name and history of one of the 359 soldiers who fell on and around Juno Beach on June 6, 1944 (potentially accessible via QR codes). A mirror site in Canada is also conceivable: for each tree planted on Juno, another could be planted elsewhere.

Consideration of these options should be taken ahead of time with relevant administrative authorities (the city, the DREAL, the Conservatoire du Littoral, DDTM, etc.) so as to adhere to the various administrative regulations.

In the post-pandemic world, given the awareness that this crisis generated, when the time comes for developing green and meaningful investments, an environmentally-focused project that is solid, well-defined, innovative and pioneering would benefit from public and private assistance and funds at all levels. An example of a future Request for Proposals (in French only): http://www.normandie.developpement-durable.gouv.fr/contrats-de-transition-ecologique-cte-en-normandie-a2673.html

The willingness of the Terres de Nacre sector in the realm of sustainable tourism, the direction that the JBC is taking in this regard, and the identification of a range of local partners justifies a real, collective reflection on initiatives which will bring structure to a project. Privileging the regeneration of biodiversity and nature by relying on knowledge of the dynamics of ecosystems falls within the priorities of the national objectives. This is also true for civic participation in the French government’s Sustainable Development Goals. All of this brings legitimacy to the aspirations of Courseulles’ population and may even be considered a driving force for the creation of a project.

A vision aligned with the Sustainable Development Goals of the French government and the UN’s 2030 Agenda

The JBC’s approach to a territorial project dedicated to the environment is in line with several of the UN’s Sustainable Development Goals to transform the world by 2030.

4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture’s contribution to sustainable development

8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
8.9 By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products
11. Make cities and human settlements inclusive, safe, resilient and sustainable

11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries

11.4 Strengthen efforts to protect and safeguard the world’s cultural and natural heritage

11.a Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning

12. Ensure sustainable consumption and production patterns

12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse

12.b Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products

13. Take urgent action to combat climate change and its impacts

13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

These issues have also been taken up by the French government within the proposals and commitments of French stakeholders surrounding at least 3 of 6 national issues:

**Issue #2** Transform society models by implementing low carbon strategies and conserving natural resources, to act for the climate, planet and its biodiversity

**Issue #3** Focus on lifelong education and training to change behaviour and lifestyles that are adapted to our future world and sustainable development challenges

**Issue #5** Make citizen participation effective to achieve SDGs, and truly transform practices by increasing trial projects and local innovation (the local level being the key link to making the transformation a reality)

Within this roadmap, communities are invited to integrate the SDGs within their territorial activities, with territorial projects aligning with the 2030 Agenda. This implies involving citizens from the outset of the creation of public policies and throughout their undertaking, to help improve public decision and make it more sustainable.

**Conclusion**

Courseulles is a renowned location for tourism, featuring a port with boats for fishing and leisure, and surrounded by lush greenery typical of Normandy. Yet for decades, Courseulles has seen increasing concrete structures built up around the sea, the Seulles and inland, leading to the disappearance of its farms. A balance is needed between urbanization, economic and touristic development, and the well-being and respect for nature. When it was built in the early 2000s, even the JBC could have been just one more concrete structure if, in addition to its high-quality content and architecture, it had not promoted the restoration of the dunes and natural species and the protection of the seafront west of the port. It has since become a place of memory dedicated to the history of Canada’s role on this site in 1944, put into perspective by the dunes that surround it, Juno Park.

With a comprehensive vision for the maritime front surrounding the entrance to the port, Courseulles could become a pioneer in sustainable tourism, participate in actions which are profoundly important to young generations and all who subscribe to the idea that we cannot continue to follow the same path when it comes to tourism. This is in line with major national and international objectives to accelerate the ecological transition of our economy and society.
France’s 2030 Agenda constitutes a vision and the main approach which the French Government shares with other stakeholders within society.

"Such a transformation presupposes new forms of governance firstly promoting the involvement of all citizens, especially volunteers, and recognizing the role of organizations within civil society alongside economic stakeholders and public authorities. This expanded governance is the pledge for a cross-disciplinary approach to the issues and a consistency of the actions which will be carried out at different levels, from global to local and from local to global. Innovative multi-stakeholder partnerships are powerful engines for such a transformation, and the State will support their work". Source: Livret de la feuille de route de la France pour l’Agenda 2030 – République française.