Urban Design: Cultural Identity on the Aftermath of the Montreal Olympics

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Abstract

The Olympic games are one of the longest running traditions in the world. A lot of planning goes into the design for this big athletic event, since it needs to be able to accommodate so many athletes and visitors. The problem, however, is how to design not only for the event, but also for the site in the future as well. What good is it for a city to invest so much into the Games if the site is only used to host the games? The Montreal Olympics did not look at how the site would be used in the future, but instead focused on extensive spending for the spectacle of the Games and not beyond. This project will look at the design for the Olympics in Montreal in 1976 and assess what the design should be for both the present day and the future. It will also take into account the existing conditions of the site, how infrastructure can be reused, and how the site can be adapted to fit the people of Montreal.

To do this, the project will look at other Olympic designs and how they allowed for future use, at the city pattern and the place the site holds within it, at what the public has envisioned for it, and at how it can contribute to future development. All these aspects will take into account sustainable measures, including reuse and recycling of existing materials on site, water management, and energy reduction. The outcome will be a sustainable design for the site of the Olympic Park in Montreal that fits into the city pattern and responds to what the public has in mind for the future.
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Project Background
Montreal was the host city for the 1976 Olympics. Since then, the facilities have suffered in many ways, economically, socially, and culturally. This has, in turn, extended to the entire city for a time as well. After having paid off the debt incurred from hosting the Olympics, however, Montreal has been able to thrive as a world city. Even though the Olympics have come and gone, Montreal can still use the site of the Olympic Games to its advantage. It could be transformed into something that captures both the spirit of the city and of the Olympics. It needs to reclaim its identity as a place of pride, both in referencing the past and becoming a place for the future. Furthermore, it can begin to use sustainable practices in redesigning the site, so as to not put the city into further debt, by preservation or reuse of existing infrastructure.

Montreal’s Olympic Park has become unkempt and the Olympic Village does not fit the surrounding context, though the rest of the city has flourished and developed quite seamlessly. There are several main issues that this project will address, including connections to greater Montreal, fitting into the city’s overall future plans, retaining the spirit of being an Olympic site, and sustainable means of the new design implementation. These questions will begin to direct how this problem can be solved.

Placemaking within the city of Montreal
- How does the site fit into its immediate context?
- Does it become passive or active recreation?
- What existed on the site beforehand?
- Does the metro connection to downtown need to be emphasized?
- Can the Olympic Village be adjusted to the scale of the surrounding area?

Future Plans
- How does the site contribute to the developmental vision of the city?
- Does it support future growth of Montreal?
- Will it be viable for future generations?

Olympic Spirit
- How is the Olympic spirit represented throughout the site?
- Does it continue to inspire athletes through the Olympic ideals?

Sustainable Development
- Will current infrastructure be preserved?
- How can demolished infrastructure be reused or recycled?
- Can some of the previous green space be reclaimed?
The issue of the design for this site is significant because it held such a monumental event and should not go forgotten and unused, but should contribute to the City of Montreal, the people, and the Olympic ideals. Thus, the topics that will be addressed are how to sustainably transform the site, how to design a site that fits into the city pattern and accommodates future development, and how to keep the spirit of the Olympics alive for a place that has previously held the Olympics. In the following pages are the main issues are for the Olympic Park in Montreal, research pertaining to this issue, and how the project plans to address these issues.
Introduction
The discussion of planning the Olympics has been a debate for some time now. Over the years, cities have begun to take more and more care in their designs for hosting the Olympic Games. The following literature review will look at different issues that go into designing for the Olympics, what other cities have done in their designs for the Olympics, and a look at the city of Montreal. Additionally, it addresses the key problems that the Montreal Games faced, including spending, the development of the Stadium and the Olympic Village, transportation, and Olympic design as it has contributed to the urban development.

In “Olympic-driven Urban Development”, Dean Baim demonstrates how each city has addressed several major aspects of urban change, including transportation, telecommunication, sports venues, the Olympic stadium, housing, urban culture, and ecological investment. In a table, he classifies the level of success of each Game since 1896 by addressing five aspects: sports facilities, housing, urban culture, transportation, and environmental impact. The overall tendency is that each city looks at more of these aspects as time goes on, with a few exceptions. According to this table, Montreal has a significant commitment to three out of five aspects. It addresses sports facilities, housing, and urban culture. Their transportation system had recently been updated for the Expo 67, so that was not considered to be directly related to the Olympic developments. They did nothing to address the impact on the environment (Baim 82).

Introducing an environmental aspect to the design of the Olympic Games has now begun. Host cities now try to make it a point to address this issue. A prime example is 2000 Sydney Games. Michael Horne, author of the article “The Sydney Olympics 2000: combining technology and design in the planning of the “Green Games””, assesses the different areas of this design, categorized into three ‘moves’. The Red Move is over 9 hectares of central urban space and Olympic plaza. The Green Move includes a central park, fig grove, green fingers that extend into the urban core, and an urban forest. The Blue Movement recognizes the relation of the design to water. While these are case specific instances, the general idea can be applied to any design, making it more sustainable, environmentally friendly, and healthier. This is an aspect that was essentially ignored in the design of the Montreal Olympics, and in some cases, worked in the opposite direction of environmental benefits. This may have been because the site had been intended for recreational use, thus, little environmental intervention took place. Either way, the construction of the site could have addressed this issue to a larger extent. Firstly, they could have reassessed their use of so much concrete, which uses a lot of energy and releases a large amount of carbon dioxide into the air. On another point, while the area had been zoned for
recreational use, it had previously been a park that is now lost to a concrete jungle.

Despite addressing many of the pressing issues facing a city when planning for the Olympics, Drapeau, the mayor, did not quite set his priorities straight and spent far too lavishly just to make things look impressive. Thus, Montreal is a prime example of why people have begun to question how the Olympics are designed and how they should begin to play a role in the future of a city and not just a site for the Games to be held. This being said, there is one city that seems to address the design for the Olympic Games to the best extent. The plan for the 1992 Barcelona games has been dubbed the “Barcelona model”. This was the first time the games had been recognized as more than that, but as a chance to improve the city for the future. Baim prides Barcelona as being one of the best Olympic Game designs. This same praise comes from Jon Coaffee in an article entitled “Urban Regeneration and Renewal”. This general consensus of the success of the Barcelona Games has led to the idea of the “Barcelona Model”, in which a city would regenerate itself through hosting the Olympics. Though the Games in Barcelona took place after Montreal, some of the same objectives can be used in the renovation of the Olympic Park in Montreal. After looking at several sources, including Latouches’s “Montreal 1976”, Pitts and Liao's *Sustainable Olympic Design and Urban Development*, and Gold and Gold’s *Cities of Culture*, they seem to be in agreement that some of the main issues of dispute over the 1976 Olympic Games in Montreal are the lavish spending, the construction of a now unused stadium, the pyramids that comprised the Olympic Village, and how transportation came into play to connect the site of the Games to the rest of the city and how it became accessible to the rest of the world.

**Spending**

It is beyond doubt that the Montreal Games were unnecessarily extravagant. As Daniel Latouche points out in “Montreal 1976”, Montreal was “supposed to demonstrate a medium-sized city’s ability to stage the event.” It was going to be the “Olympics with a human face”. This, at least, was the argument used to win the Olympic bid in the first place. The IOC hesitated awarding the bid to Montreal due to the fact that it was a smaller city compared to those that had hosted the Games in the past. Jean Drapeau claimed they would make use of existing facilities, had already improved transportation from the recent world exposition, and were in the market for a large-scale stadium.

Montreal quickly realized that they had spent way too much money in preparation for the Games. In this absence of serious financial planning, as pointed out again by Latouche, Drapeau had
claimed that enforcing a budget was demeaning to the ideals of the Olympics. Thus, they tried to hide the over-spending. Even years later, the legacy still remains, as the spending on the Olympic Stadium was voted the “most obscene use of taxpayers’ money” by Montreal: The Ultimate Guide. This is quite understandable, considering the city’s debt amounted to Ca. $1.5 billion, as noted in Sustainable Olympic Design and Urban Development. This debt was not paid off until 2006, 30 years after having hosted the Olympics.

While this is all true, the Régie des installations olympiques views it in a slightly more uplifting light. They do not deny that they took on a total of $1.5 billion and that it took 30 years to pay off. They point out, however, that the mortgage on a house can take just as long, so that is a reasonable amount of time to pay off such a large project. To pay it off, Montreal had set aside an Olympic fund. The rest was paid off through a tax on tobacco products. They further explain that certain costs were incurred without their control. These have included structural problems with the soil and the rise in the cost of steel, a major building material used in the project.

Stadium
The stadium was one of the main aspects that cost so much; however, it was something that the city of Montreal was in the market to build. The decision to build a large-scale stadium, according to Latouche, was in response to being denied a place in baseball's National League. The fact that they were in fact in need of this stadium helped their Olympic bid. The stadium, however, became much more of an ordeal. It was designed by Roger Taillibert, a French architect picked by Drapeau who was proposing a concept for this new ‘revolutionary’ stadium. It was to have a 70,000-spectator capacity and be the centerpiece of the Olympic Park.

Visually, it was a wonderful work of art to have as this type of centerpiece. Practicality, on the other hand, was not as high of a concern. It is described in Sustainable Olympic Design and Urban Development, by Adrian Pitts and Hanwen Liao in 2009, as being “among the most complex concrete structures ever attempted”. Its notable features are its self-stabilizing roof shells, and the 18-floor leaning tower designed to house a retractable fabric canopy that would overhang the main stadium. This tower is, in fact, the tallest of its kind. Montreal had originally proposed a fully enclosed stadium, as explained in Cities of Culture, so that it could be used during all times of the year. The IOC, however, would not support this since all previous stadiums had been open. That is when the retractable roof was proposed. After the first Montreal winter, however, the canopy did not survive and was replaced with a regular roof, leaving the tower unused. What began as a state of the art stadium, complete with a retractable roof supported by cables from...
a unique leaning tower thus became a pretty ordinary stadium with a regulation room and cool observation tower. This begins to explain how it was voted as "most obscene use of taxpayers' money". This idea that the stadium was going to cost too much came about even before the construction of the stadium was complete. While Jean-Claude Marsan, in Montreal in Evolution, boasts about the "Beaux-arts architect[ural] beauty, style of clarity and function, harmony of the ensemble". He even goes on to call the structure "majestic", which it very well is; however, even he begins to question if the cost is justifiable. Given the eventual failure of the technologically advanced roof, he too would have probably disagreed with this spending.

The stadium was used after the Olympics by the Expos baseball team. This franchise ended in 2004. Since then, it has gone relatively unused, according to some sources, initiating some ideas for demolition. One idea, as explained again by Latouche in "Montreal 1976", was to make room for an 'urban forest'. The cost of demolition, however, would be around US $500 million. This could put Montreal back in the debt it had recently recovered from.

Again, the Régie des installations olympiques has different information on the status of the stadium. It is open for several different types of events, including trade fairs, exhibitions, sports events, concerts, and much more. Since its use for the Olympics in 1976, it has had over 66 million visitors. This even takes into account that it was only open for 8 months out of the year, beginning in 1999. The stadium has in fact been booked for an average of 190 days out of the year for any of the various events mentioned. Furthermore, this was where the Olympic ceremonies took place, along with several of the sporting events. If one wants to preserve the Olympic spirit within the site, it is vital to preserve and celebrate this building.

### Olympic Village

The Olympic Village is another key component of the Olympic Games, housing the athletes and trainers while the Games are taking place. Sustainable Olympic Design and Urban Development spells out the original plan for the Olympic Village in Montreal. There would be five residential compounds spreading several kilometers around the Olympic Park, but designed to line up with the city's existing housing scheme. This idea was also rejected by the IOC, due to security concerns from previous Olympic Games. Thus, the plan for the Olympic Village changed drastically. They constructed two 'pyramids', as explained by Latouche. The first floor of each was meant for services such as convenience stores, cafeterias, medical clinics, and pools. They included 980 apartments, housing up to 11,000 athletes and trainers. Latouche also points out that it looks almost identical to the Baie des Agnes in Southern France. Fortunately, according
to a study in Olympic Cities: 2012 & the Remaking of London, there is actually a waiting list for the people of Montreal wanting to live in the pyramids that made up the Olympic Village now that it is for residential use.

This is contradicting to other observations on how people feel towards the structures. Firstly, there was opposition to using the location for the structures, which had previously been 34 hectares of urban green land. This land was then replaced by these massive profiles, which in described in Sustainable Olympic Design and Urban Development as being unnecessarily oversized in contrast to the low-rising surroundings. This was considered, by Marson, to be anti-social, since they would be taking public green spaces and converting it to private housing for a privileged minority. The density level of the structure was also inappropriate for such an isolated and disconnected site. Furthermore, the exterior corridors, which were meant to fit in with the concept of the building, were not conducive to the climate of the area.

Transportation
There were not many improvements in transportation that were done specifically for the Olympics. This is because so many improvements were recently done anyway. When questioned by the IOC about transportation, Drapeau told them, "Montreal already had the world’s most efficient metro system, one which will be expanded. And a brand new airport will also be built." The Montreal metro system is widely known to be very efficient; it was even discussed in the Transportation Planning class taught by Dr. Parker as a good example of a mass transportation system. These implemented changes to the urban transport system, as stated by Olympic Cities: 2012 & the Remaking of London, would reduce car use and provide an improvement in air quality.

The airport, on the other hand, was not as widely noted. It was located 50 kilometers northwest of Montreal. According to Latouche, it only needed 14,000 acres, but actually used 80,000 acres of highly productive agricultural land.

Olympic Urban Development
The development of the Olympic venues is something that needs great care and attention. Though the outcomes of the Olympic Games in Montreal were successful in the short-term, they were not so in the long-term. Surprisingly, this is not completely due to how the Games fit into the urban development of the city. The development for an Olympic Games lasts, on average, 10 years. It begins several years beforehand, which is something that Montreal inadvertently
did, and ends with redeveloping Olympic facilities for post-Game use, which Montreal did not do. The site chosen for the Olympic Park had been set aside for recreational use for some time. The overall development for the Games operated on what Pitts and Liao call "inner-city mono13 clustering". This means it followed an “urban contraction form with most of the venues concentrated on one large site within the city's central mass and others dispersed across the metro area.” This happened to be an appropriate scheme for Montreal since, previously, it had suffered a decline in its urban population. This brought about its need for urban regeneration, both physically and economically.

While the site addressed the overall need for recreational use, how it specifically did so was not appropriate. Firstly, as Marson explains, “in a city short of green spaces, it was unthinkable for the city powers to allow the sacrifice of an open space ... which had been developed at taxpayers' expense and used as a park for more than 20 years.” This open space is now cluttered with over-sized concrete buildings. Barcelona learned from this mistake and implemented temporary buildings that could be moved or taken down, eliminating the legacy of the 'white elephant'. These buildings could have been acceptable, however, if they had only considered how they would be used in the future. Instead the buildings are unused and taking up valuable land that is better suited for another use.

**Placemaking**

As previously stated, the site chosen for the Olympic Park had been set aside for recreational uses. This being said, it did fit into the development of the city overall. It solely addressed infrastructure for the Olympics, which is obviously a major event. As John and Margaret Gold explain in *Cities of Culture*, “Spectacular sports complexes are often created on the back of attracting so-called mega-events like the Olympics or football's World Cup. These events are widely believed to be golden opportunities for ambitious city authorities to initiate far-reaching regeneration plans.” For the event of the Olympics, this works out great. It impresses other nations and shows what that host city is capable of putting together. Gold and Gold explain “transferring the site to its post-festival state takes a further extended period of time. Festival buildings are often ill suited for subsequent uses. The organizers may need to find new owners or tenants, dispose of assets, dismantle some buildings, convert others, and undertake whatever landscaping is necessary.” This seems to be directly applicable to the situation of the Olympic Park in Montreal.
The design for the Park addressed culture under the context of creative achievement. It provides “opportunities for creative exchange unavailable elsewhere.” The iconic architecture surely achieved this. Gold and Gold state that this, however, is just one side of culture. The other side relates to social heritage. While social heritage may seem to stem solely from history, it also suggests day-to-day life. Now that the Olympics are over, the city doesn’t need to impress the nations of the world or accommodate world athletes. It now needs to address the people who live in the city and to emphasize, “ordinariness comprising the taken-for-granted background to everyday life.” Since it hosted such a spectacular event, the site seems daunting and intimidating to everyday users. It needs to exchange those feelings for comfort, availability, and inspiration. In the words of Brown, Dixon and Gillham, authors of Urban Design for an Urban Century: Placemaking for People, the site needs to “restore a sense of human scale and activities.”

This concept is one supporting element of their idea of places for people. If places are in fact designed for people, they may also address issues of social challenges and economic opportunity, sustainability, building community, and protect human and environmental health. It describes the impact of a public space being “based on relevance, inspiration, feasibility, phasing, implementation, and flexibility.” It goes on to spell out principles about how to achieve a successful public space that is made for the people. While this particular book tends toward a focus in the United States, the concepts can still be applied in areas outside of the States. The main concepts are as follows:

1. Building community in an increasingly diverse society
2. Advance sustainability at every level
3. Expand individual choices
4. Enhance personal health
5. Make places for people.

A place that supports a diverse society will bring people together providing equal opportunities for all. Sustainability can help a community grow, but will be discussed in more depth in the next section. Individual choice allows people to use the site in various ways, attracting a broader range of people. By getting people outside and active, they start to achieve healthier lifestyles.

Also, open space helps to create a healthier environment. The last principle is what really determines if a public space is successful. Attracting people is a key ingredient, so things need to be at their level. Spaces stress first floor appeal on multi-level complexes, bringing structures
down to human scale, and relating to the surroundings. These places integrate history, nature, and innovation, creating different types of attractions for different types of people. This starts to give a place an identity, strengthening people's connections to it. Identity is how people come to know about places on a much larger scale; some examples Brown et al. points out include the Boston Commons in Boston, Massachusetts, Central Park in New York City, public squares in Philadelphia and Savannah, Georgia, San Antonio's River walk, and San Francisco's Golden Gate Bridge.

There are many other examples that have been pointed out by Brown et al. of successful public spaces that follow these principles. The Theater District Streetscape in Boston employs lighting and murals to capture the spirit of the city, it provides safe and inviting pedestrian access, and includes visible public investment, such as tree plantings and other improvements.

Battery Park City Streetscapes in New York City is another good example of the recommended principles. Even though the improvements had been done in light of security after September 11, 2001, they improved pedestrian access to the parks by creating more direct routes and improving the quality of street crossings. Millennium Park in Chicago, Illinois also employs some of the said principles. It offers a mixture of activities, some active and some passive. It employs traditional park uses in conjunction with internationally recognized landmarks. This shows that even something of grandiosity can be incorporated into the everyday lives of people. These examples are proof that these principles as spelled out by Brown et al. can help to create a successful public space. Brown et al. offers several other well-known sources that have discussed similar issues and ways of addressing them. These include The Concise Townscape by Gordon Cullen, The Death and Life of Great American Cities: The Failure of Town Planning by Jane Jacobs, and The Image of the City by Kevin Lynch.

Sustainability
Sustainability is an important part of making a place for people. It ensures it will be around for future generations, and, if designed well, can begin to address issues related to economics and social justice. This project, however, focuses on the more physical side of sustainability. The site currently has large concrete buildings, as discussed when explaining the details of the stadium. At least some of the buildings will most likely be demolished. Steps can be taken, however, to reduce the waste from the demolition and to reuse and recycle materials from the buildings to be incorporated into the new design. This demolition, however, should be addressed with care. As Bill Addis explains in his book Building with Reclaimed Components and Materials, “During
the last decade or so demolition methods have moved away from careful dismantling towards more brutal processes that tend to reduce buildings to piles of rubble. It would clearly make more (environmental) sense to salvage all components before they have been destroyed, so they might be reconditioned and reused.” While this book speaks mainly of material reuse in buildings, other applications are also possible. If materials can be reused and recycled, it would help with the environmental impact of the project. As it is now, “If every country were to have the same environmental impact as Western countries currently do, we would already need more than three Earths to ensure our long-term, sustainable survival.”

Several things can be done throughout the lifecycle of a material to ensure its optimum usage. Addis explains how the delft ladder offers material suggestions for pre-construction until it is used through when it can no longer be saved and is considered waste. The options applicable in this instance are element reuse, when elements of a building are removed then improved and reused in a new situation, material reuse (recycle), when materials are reused in the production phase but for the same purpose, and useful new application (‘down-cycling’), when materials are used in a different situation and usually at lower performance capacity. The upside to the reuse of the buildings in the Olympic Park is that it is considered reuse in situ, meaning materials will be used in the same locations, cutting down on transportation energy and costs.

The main material to be considered for reuse is concrete since it comprises much of the existing buildings. This is not surprising considering, as Calkins states in her book Material for Sustainable Sites, concrete is the most common construction material, as well as the second most consumed product in the world after water. It is used so much due to its durability, high strength, and reflectance, which helps to reduce the urban heat island effect.

As Addis spells out, concrete is made of aggregate (55% gravel, 25% sand), cement (14%), and water (6%). Different additives are used to obtain a certain characteristic. The problem is how much energy and waste goes into the production of concrete, between the quarrying for new materials and the heating to make the cement. This being said, Addis suggests five different options for reducing the impact of concrete. These options are prolonging the life of concrete structures, reusing reclaimed concrete components, replacing virgin aggregate, replacing the lime-cement, and finding uses for crushed concrete after demolition. The project cannot go back in time to redesign how the buildings were made. This being said, the current state of the site provides many reuse and recycling opportunities. Since structure is specific, it can be difficult to reuse structural elements, however, they can still be used artistically. By crushing up the
• concrete, it can be used in several different instances.

• Larger pieces can be used in gabion structures. If it is further crushed, Charles Kibert, author of Sustainable Construction, suggests using it as a subgrade for roads, sidewalks, and parking lots. If the concrete is crushed even more than that, it can be reused to make the aggregate for new concrete. This new concrete could be used to create new sidewalks, sports courts, new buildings, etc. If it is crushed into larger aggregate, it could even contribute to making porous concrete to allow for water flow. Porous aggregate allows pore spaces between 11 to 21 percent.

• Furthermore, other elements from the buildings have the potential to be used. Lights can be used in the landscape or in proposed buildings. Proposed facilities can be equipped with piping and other necessities from the existing buildings. The idea that materials are reused on site is the most beneficial. In the case that not all elements are needed, however, they can still be salvaged to use in new construction elsewhere in the city or nearby.

**Context**

• In a book entitled Montreal-The Ultimate Guide, there is a summary of what the overall city is like. Montreal is a city in Canada, in the province of Quebec. It is actually located on an island in the St. Lawrence River. This River serves as part of the border between the United States and Canada, as well as connects the Great Lakes to the Atlantic Ocean. The island is approximately 31 miles long by 8.5 miles wide. It includes many bridges to connect to the mainland, making it very accessible to visitors and tourists. Between the connectivity and the size, it hardly feels like an island. The most prominent feature of the island is the mountain. Mount Royal is not only beautiful itself, but also offers beautiful views of the rest of the city.

• Furthermore, there is a difference between the island and city of Montreal. The city is one of 29 municipalities on the island, though they have merged into the city of Montreal in recent years. The Guide also says that Montreal is, in fact, the second largest urban centre in Canada. It attracts approximately five million visitors in a year. This is due to several reasons, including, but not limited to, their excellent museums, charming Old Montreal with its horse-drawn carriages, quaint outdoor cafes and historic buildings, and, the site this project will be addressing, the world-famous (or infamous) Olympic Park. Montreal also boasts an exciting jazz life, comedy and film scene, even a wondrous fireworks display during its 4-month long festival season. It is also home to several sporting venues, including the Grand Prix Formula 1 racing, the Expos baseball club, and the Canadiens hockey team. It has a pleasant mix of commercial and residential
areas, wonderful parklands and plenty of bike paths connecting many vibrant neighborhoods. In addition to great bike paths, the city can boast an excellent public transit system and even particularly clean metros.

Furthermore, the Guide begins to describe a few districts that make up the city of Montreal, capturing the spirit of the city. Old Montreal is obviously a historic district. It offers some lovely historic buildings and monuments, as well as some nice cafes, giving it a uniquely European-feel. The Downtown of Montreal is similar to the downtowns of most other cities. It is home to "major hotels and shopping areas, two of the city's best museums, McGill University campus, Chinatown, hundreds of restaurants and bars, much of the financial district..." Different than most downtowns, however, Downtown Montreal also holds a vast subterranean network known as the underground city. St-Denis is the Latin Quarter of Montreal. It is the intellectual and cultural Mecca of French Canada. In addition to this Mecca, it is part student ghetto and part bohemia. Despite this small obstruction, it has one of the best nightlife areas, drawing a young and trendy crowd. Boulevard St-Laurent is the Main district in Montreal. It is an extremely culturally diverse neighborhood, and provides the idea of what would be a "slice of life, Montreal style", being more personality and less fancy. Plateau Mont-Royal has many distinct ethnic neighborhoods and has the highest population density though does not have a lot of high rises like one might expect. Instead, it is compromised of a lot of shopkeepers living in crowded low-rises. It is an excellent example of successful urban planning. Westmount is home to one of Montreal's most beautiful parks, some of the most compact and exclusive shopping, and some of the most gorgeous and expensive houses. Lastly, Outremont is mostly neighborhoods, with three good shopping streets. The establishment of a railway yard here spurred urbanization after 1900, foreseen and accommodated for by the politicians of the time.

The various districts, connectivity, and culture have all greatly contributed to the fact that Montreal has even been ranked one of the three most livable cities in the world by an American study, and consistently ranks high on other similar lists. Fortunately, all the greatness that is Montreal has been able to exist despite the terrible aftermath of the hosting of the Olympic Games in 1976. As it has been said, "The Montreal Games were an urban catastrophe which few other cities have had to endure, but apparently, the city survived without too much difficulty." In the times since the Games have been held "...the city's cultural, economic, social and even political scene is thriving and, with four major universities, Montreal has become one of the leading academic and research centres in North America, while the downtown area would be unrecognizable to the 1976 visitors."
Conclusion
Of the literature reviewed thus far, there are many consistent views of the end design for the 1976 Olympic Games in Montreal. While they served their short-term purpose somewhat successfully (construction issues came up in several instances), they concluded in infrastructure that was far too expensive and has thus far become unused. Furthermore, it subtracted from the already depleted green space and broke the urban fabric that existed throughout the rest of the city.
Goal: Connect to the city of Montreal
   Objective: Make accessible through connective transportation corridors
   Objective: Ensure the site responds to the immediate context

Goal: Plan for future development of Montreal
   Objective: Fit design into urban growth pattern of the city
   Objective: Re-evaluate use of Olympic Village
   Objective: Create variety of uses in order to attract different types of people

Goal: Maintain spirit of Olympics
   Objective: Introduce beginner and amateur sports to the site
   Objective: Include a memorial or dedication to the Games

Goal: Design for sustainable development
   Objective: Make use of existing buildings and infrastructure where possible
   Objective: Reuse or recycle materials from infrastructure to be demolished
   Objective: Reclaim green space
- One of the main things this design will try to achieve is offering a variety of uses so that it will attract different types of people. This will ensure people will continue to want to use it into the future. These types of people fall into three main categories.

- **People of Montreal**
  - It will need to draw on the people that are most likely to use it. The site was created for an Olympic event, but no longer serves that purpose. It needs to be re-evaluated for everyday use. By becoming a destination, it will draw on the entire people of Montreal, while bringing the scale down will attract those in the immediate vicinity.

- **Tourists**
  - The site did host the Olympics and still has remarkable architecture from the event. Thus, people visiting the city are still drawn to it as a destination point. It should reflect on and celebrate the events that happened there, while remaining a living, changing site.

- **Athletes**
  - In light of the Olympics, the athletes that competed there cannot be forgotten. Facilities remain on the site for their use, in addition to new proposed fields for beginners. It becomes a site of play, bringing fun into sports as a source of inspiration.
The Olympic Park of the 1976 Games is located about four miles from Montreal's downtown. The boundaries of the Park are Avenue Pierre-de-Coubertin to the east, Boulevard Pie-IX to the south, Rue Sherbrook E to the west, and Rue Vaiu to the north. This is where the main stadiums are located. It then extends northward along the west side of Rue Sherbrooke E up to Boulevard de l'Assomption, where the Olympic Village was located. It is adjacent to a golf course, Maisonnueve Park, Insectarium, and Botanical Gardens. The buildings on site are the main Stadium, the Tower of Montreal, the Biodome, StarCité (a movie theater), the Pierre-Charbonneau Sports Center, Saputo Stadium, and the Maurice-Richard Arena.
Figure 2: Biodome

Figure 3: Saputo Stadium

Figure 4: Aerial View of Olympic Park
There are several factors that have or can influence the site. These are based on either existing conditions or future plans as spelled out by Montreal's master plan. There are several maps in Appendix 3 that show the site in context of the city in relation to these different influences. It is currently surrounded by residential areas to the east, south, and southwest. To the west are the Botanical Gardens, Maisonneuve Park (one of few large green spaces within the city), and the Insectarium. The Olympic Village is on the block to the north, diagonal from where the stadium is located. The block to the northeast provides various employment opportunities, both commercial and industrial.

There are currently two metro stations located on the edge of the Olympic Park. Another is located a block away, to the north. This station has been proposed for "intensification" by the master plan, meaning increasing the density and mixed-use so as to promote the use of public transportation. There is also a bike path that cuts through the Park and continues into the nearby neighborhood.
Due to the conditions of the site, there are several things that the site should do. It should respond to the proposed intensification around the metro station to the north by creating an urban-like environment and providing amenities that one might find in a more urban area, including seating, open space, opportunities for kiosks and vendors, and plaza space.

The site should develop a transition from the green spaces to the west into the site, making it more of a draw for people to continue from one space to the other.

The site also needs to respond to the large amount of residential areas to the east and south. This is their neighborhood and should act accordingly. They would want small parks, places to walk, areas for their children to play.

Lastly, the buildings are tossed around the site in a disheveled fashion. In order for the site to be successful, there needs to be connections throughout and within the site, encouraging people to move from one area to another.
The project looked to a lot of precedent studies to help inform my design. Some of them were Olympic Parks from different cities. Others involved using patterns to unite a site, and others looked at how European designs responded to their sites.

**London 2012**

The plans for the post-Olympic design in London were done by two firms, James Corner Field Operations and eriekt architecture. James Corner's design is to the left. It embraces several different and fun uses done in organic shapes. It responds to these different uses by connecting them with a bold path. These activities are both active and passive. They reach a wide range of users. It addresses different sized spaces to accommodate larger groups of people or more intimate areas. It involves interesting shapes and a diversity of uses interwoven together.
Rio de Janeiro 2016
To the right is the phasing for the Olympic design in Rio de Janeiro, done by AECOM. To retain use of the area, the site is phased out to accommodate dense housing, along with a variety of other uses. It begins this planning before the initial designs are even laid out. It decides in advance that it will need to change and adapt to retain use into the future. It even takes the time to plan a transition phase from the Olympic event to the permanent phasing.

This is becoming more of a trend in Olympic designs, to plan for what it will become. While it is much later than when the Olympics occurred, let alone the design process, this is the intention for this project in Montreal. It will adapt to what the city and its people needs now.
- Placemaking by using patterns
- Since the architecture is so varied and scattered in the Olympic Park, there should be a bold landscape, created by some kind of form or pattern to link and connect it together. Dan Kiley has used grids to establish an identity for a place. Peter Walker often uses bold lines of stainless steel and light, along with regular geometric patterns. Martha Schwartz also employs many different patterns. She usually uses strong colors and themes, something she is well known for. In Kitigata Garden City, Japan, she connects very different building shapes by using a unique pattern of outdoor spaces. It also employs a mix of active and passive spaces to promote movement through the area. George Hargreaves created a braided stream at the University of Cincinnati. This was to recall the history of the site, creating a distinct pattern. Several other landscape architects use patterns to help in giving a space definition. This project will begin to create a pattern based on people's movements to and through the site. (LAE 13)
European Influence
This is a look at how some European designs and respect for site could be applied to Montreal.

Amsterdam Olympic Park urban plaza was looking to find new meaning for an angular area around its Olympic stadium. It drew its design from the nearby industrial atmosphere. It left plenty of open space for large groups and urban events. It used the 'Olympic rings' to influence the shape language. It is then intended to link to a neighboring park area by bridges to accommodate cyclists and walkers. (LAE 21)

Allianz Arena, located in Munich, Germany, is an arena set in an urban landscape at the edge of a contemporary metropolitan region. It needed to draw from this area to bring people in. Thus, the main objective of the design was access to the stadium. The area adapts, however, changing the intensity of the spaces being used depending on the amount of people or the event taking place. (LAE 122)

Last is the jardins d'Éole in Paris, France. This project intended to respect the place but invite liveliness. It has transitioned from fields to an extremely industrial area to now a park. It became a "rough, active, multifunctional people's park with subtle elements and elegant combination of water, concrete, and lawn" (LAE 148).
Approach 1
As the analysis demonstrated, there are three major uses surrounding the site. The area north of the site is mainly used for employment, commercial and industrial. So the way people experience the site from that direction should reflect those ideas, drawing from the activities they might be there for. Whether they are shopping, working, going to a restaurant, it should provide amenities and spaces for those needs.

Approach 2
The area to the west is mostly green space, consisting of a golf course, botanic gardens, etc. This needs to transition into the site much better, as opposed to the immediate jump to harsh concrete. Bringing more green space into the site in general will help, but it should still transition from the extent of green space to more people-focused spaces.
Approach 3
The last approach is influenced by the residential areas. The streets are currently very busy, so something needs to be done to encourage residents from the nearby neighborhoods to be able to walk to the site and enjoy it. It should also incorporate activities that would be neighborhood and family-friendly.

Final Concept
This final concept overlaps these approaches to determine what the spaces within the site function as and how they connect. The southern area will reflect the green areas and accommodate the nearby neighbors in a quaint and passive park. The northern part of the site will be a much more active space, so as to attract people from the commercial area north of the site, while also incorporating a green transition and fun activities for residents to use.
Commercial Intensification
Based on the Assomption metro station, this area is meant to be intensified. Thus, more commercial attractions will be brought in, offering more varied places to go. It will also become denser, creating edges instead of leaving gaping parking lots between buildings.

Green Space Preservation
While this area was suggested to be turned into a neighborhood by the city of Montreal, it is one of few significant green spaces closer to the heart of the city. It is an attraction in itself and can aid in attracting people to the general area from other parts of the city. The green space is also important in juxtaposition to the residential areas and the employment areas.
- Residential Infill
- While the park will not be turned into residences, the denser residential goal of the city can be achieved by filling in the current neighborhood. There are still plenty of pockets that can be used to accommodate more people living in that area. Furthermore, it will bring more people to the area that could both use the Olympic Park and support the intensified commercial area to the north.

- Buildings Preserved
- While it had been suggested that not all the buildings on the site were being used to their full potential, they are used quite extensively and maintain the memory of the Olympics through iconic architecture. The only change is the suggested removal of the StarCité, the movie theater on site. It is simply recommended that it be moved a block north, to fit in with the other commercial attractions instead of the sports-related venues.
The diagram begins to create the program for the Olympic Park. The residential areas call for places to picnic or areas for children to play. They could have access to more gardens, that begin to suggest a connection to the botanical gardens across the street.

As it moves to the north, it begs to be more urban. It forms plaza spaces and seating spaces, open lawns and splash areas. This variety calls out to the different users that would approach the site, as opposed to the residential-driven southern part.

It then moves to a sports-dominated area, among the various stadiums and arenas. This brings the athlete back to the site and also references the golf course across the street.

The site still remained disconnected, however, among all these different spaces. There needs to be a link that provides a physical connection to make one's way throughout the site.
Master Plan
The diagram directly translates to an illustrative master place, depicting what each of these spaces would look like. An area for picnicking becomes grassy and meadow like. It's quaint, with plenty of trees for shade. A play area translates literally into a playground. The garden area becomes a memorial garden for Olympic athletes.

These areas are accessible by a promenade that connects to the other side of the stadium, where the character of the site changes from a neighborhood feeling to an urban area. The plaza space provides amphitheater seating around a large area of open space. A small splash area brings fun and activity into the site. A large lawn offers space for a plethora of uses of the user's choice. It is then surrounded by gradual terracing.

It then switches over to a sports-focused space, including different types of fields and courts, along with amenities those would require.
Before and After

These images demonstrate the change in material, scale, and character on the site. The site had been full of harsh concrete, all out of human scale. There were abrupt and dramatic elevation changes, making accessibility confusing. The area has now been transformed into family-friendly gardens, playgrounds, and picnic areas. There are a couple hills within the area to break up space. They would also be good for sledding in the winter, since Montreal is a cold city with a prominent winter. The promenade then connects people to the rest of the park.
Southern Area Transformation
Park Gateway
In order for there to be a sense of arrival to the park, these very identifiable gateways will be at major park entrance points.

Olympic Garden
Like the gateways, the garden references the iconic symbol of the Olympic rings. It is colorful and fun. It retains a whimsical shape while still suggesting a formal garden. It also offers small areas for contemplation.
Playground
Playing is the first step in getting involved in sports. The playground is large and has a wide range of activities. It encourages children to have fun and be active.

Adjacent Sledding Hill
Montreal has very prominent winters. Thus, the site needs to retain possibilities for activities all year round. Especially for children, sledding is a great pastime. The large playground area allows for a hill for sledding, which also serves to divide up spaces.

Section A-A'
This section runs through the Olympic Gardens, the promenade, the playground, and to the sledding hill. It demonstrates subtle elevation changes and spatial enclosures and separations.
- Before and After
  - What had primarily been vehicular access is now a people-friendly place. It includes tiered seating around a plaza, where kiosks or stages could be set up. There is a terraced area around a large open lawn, intended for any variety of uses. This lawn could be converted to an ice-skating rink in the winter, again making it usable during Montreal's winter months. A splash pad provides some fun for children in the warm months. The promenade still connects to the rest of the site, as well as providing entrance points from outside the site.
Terracing & Lawn
The large lawn area is intended as an adaptable and versatile space for any type of use. The terracing allows for views of the lawn and places for eating lunch, reading a book, etc. The terracing also begins to suggest the reuse of materials on site. Concrete blocks would be used to create the edge of each terrace, being filed down to diminish sharp edges.

Plaza Space
The plaza space references an urban space though not directly in an urban area. It is open with plenty of seating, similar to the lawn but less permeable. It provides the foundation for more structured uses. Temporary stages could be set up for outdoor concerts, and kiosks could be setup for fairs.

Splash Area
The splash area provides a source of entertainment for children in an area that is predominantly passive during most times. It is whimsical, yet simple.
Primary Promenade

As stated, there is a promenade that links all the spaces within the site together, as well as providing places for people to enter into the site. This promenade is defined by trees. The trees are intended to be larger enough and spaced far enough apart that one does not feel enclosed within the promenade and can see into the various spaces. There are enough, however, to give definition to the promenade as a pathway. The trees used are Acer saccharum (sugar maple), Liriodendron tulipifera (tulip tree), Gladiolus triacanthos var. inermis (honey locust), and Quercus coccinea (scarlet oak). All of these trees can be found naturally occurring in this area of Canada. They were chosen for their size, habit, diversity of texture, and variety of colors.
Secondary Promenades

Aside from the primary promenade, there were some extra access points needed. While the primary promenade runs through the entire site, the secondary ones are smaller, less prominent, and only link certain spaces. The trees used here can also be found in Canada, however, they are more ornamental in shaping the promenades and chosen for more their flowering characteristics. As pictured, the trees are Amelanchier laevis (allegheny serviceberry), Cornus florida (flowering dogwood), Cercis canadensis (Eastern redbud), and Crataegus phaenopyrum (Washington hawthorn).
Focus Area
Since the purpose of this project is the revitalization of an Olympic Park, there is a focus on the sports aspect of the design. This area provides basketball courts, volleyball courts, soccer fields, tennis courts, and concessions & locker rooms. The land is generally flat. These fields are intended for amateur athletes, inspiring them to work towards Olympic-level athleticism. All fields and courts are to standard dimensions and oriented north-south so as to minimize direct sunlight. (American Alliance for Health)
Before and After
This area of the site shifts from predominantly unused to an area for sports fields. It makes it more people-friendly, instead of the harsh edge of the road. Sporting fields are available to recreational teams and open use. It then fosters a sense of community by providing various amenities, like seating and concessions, allowing people to interact in a comfortable area.

Northwestern Area Transformation

Figure 26: Northwestern Part of Olympic Park
Basketball Courts
Two concrete basketball courts are proposed. These would most likely be intended for pick-up games.

Volleyball Courts
Three volleyball courts are proposed. They could be used for small tournaments and pick-up games.

Soccer Fields
The two soccer fields could be used for youth leagues, but are also open to the general public.

Tennis Courts
- Due to the intensity of tennis tournaments, the tennis courts would most likely be used for pick-up games and practice.
Concession & Locker Rooms
This whimsical and curvilinear building offers various amenities one might fight at a sports facility, but accessible to the outdoor courts and fields. It provides bathrooms, locker rooms, showers, etc. It also has a concession stand for snacks. A picnic area gives users a place to take a break from in between, before, or after games. While it doesn't necessarily resemble the architecture of the buildings on site, it does retain a unique style, as many of the existing buildings are extremely unique themselves.
Building Layout
The building part of this structure is a large curved shape that is semi-mirrored in the canopy over part of the picnic area. The canopy is a cantilevered structure that makes use of recycled materials that could most likely be found in the industrial area to the north of the park.
Column Footing and Roof Plane
This details show the necessary footing to ensure the column is structurally sound, as well as illustrating the cantilever so that the canopy is supported.

Steel Cable and Turn Buckle
This detail shows how the cantilever would be secured in place, working with the counter angle.

Roof Connections
These details show how the roof is secured in place to the cantilevered beams and how the edge of the roof is dealt with.
Joint Layout

- There is a concrete picnic area outside the locker rooms and concession stand.
- Concrete needs different joints to account for it expanding and shifting so the overall structure is not compromised and destroyed.
- This provided an opportunity to artistically symbolize the Olympics, creating the rings with the joints.
Expansion Joints
Expansion joints allow for the expansion of concrete in the heat, using a break in the concrete and filling it with a more malleable material.

Control Joints
With the general heating and cooling of concrete, the concrete does crack. The control joints control where these cracks are more likely to happen, keeping it more visually appealing by intentionally placing them in certain areas.
Montreal hosted the Olympics in 1976. The design offered unique concrete architecture, accompanied by high costs. Located four miles from downtown Montreal, surrounded by residents, park space, and commercial areas, and accessible by three different metro stations, the Olympic Park held great potential to contribute to the city. It fell short, however, and begs to be revamped. This design respected both the buildings as they are and the context of the site, while adapting the Park into new uses that cater to the future development of the city. It provides active and passive uses, as well as large and small spaces, that are all connected by a promenade. By providing a variety of uses, reintroducing green space to the site, and addressing the context of the site, it achieves its goals of connecting to the city, planning for the future, maintaining Olympic spirit, and being developed in a sustainable manner. This design has revitalized the Olympic Park to a state of glory that can be enjoyed for years to come.


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Master Plan
The maps on the following pages show different aspects of the City of Montreal, including land use, employment, building density, parks & green space, and existing bike paths, and the conditions of the Olympic site and the adjacent areas. The intensification map gives a look at the plans the City has for the future.
Employment Areas

Map 2.4.1
- Central Business District
- Business and Retail Area
- Institutional Employment Area
- Landscaped Area
- Deep Laid Employment Area
- Industrial Area
- Previous Industrial Area
- Development

Master Plan
Montreal
Areas Deemed for Intensification

Map 2.2.2

- Intensification of Activity near Existing Metro and Commuter Rail Stations
- Intensification of Activity near New Metro Stages
- Public Transit Improvements
- Max Line - Existing or Under Construction
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Master Plan

Montréal