

REDEVELOPMENT OF THE PEACE BRIDGE PLAZA
AND
BORDER CROSSING AT FORT ERIE, CANADA

Gary D. Tansley, P. Eng.
Philips Engineering Ltd.
Burlington, Ontario

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ABSTRACT

REDEVELOPMENT OF THE PEACE BRIDGE PLAZA

AND

BORDER CROSSING AT FORT ERIE, CANADA

This paper outlines the design and construction of improvements to the Peace Bridge Border Crossing at Fort Erie, Ontario. The paper briefly describes the evolution of the Border Crossing from its inception in 1927 to the present, and describes the various components of the Border Crossing, their relationship to each other and how the design of the Plaza is affected by the operation of these components.

The paper outlines the concept of Shared Border Management and how this concept will affect the design of Border Crossings in the future.

INTRODUCTION

Border crossings are constrained by their location. Many crossings, especially in Ontario, are located adjacent to rivers. Most major crossings also pass through urban centres on both the Canadian and the American side. This is the case for all of the Niagara River crossings, the Detroit-Windsor crossings, and the Blue Water crossing at Sarnia/Port Huron. These factors create extreme space limitations. Designs must be developed that interface with established communities and existing and proposed transportation facilities, while working within these limits.

This paper provides a summary of the development of the Peace Bridge border crossing between Fort Erie, Ontario and Buffalo, New York.

ABOUT THE PEACE BRIDGE

The Buffalo Fort Erie Public Bridge Company was formed in 1925 by agreement between the United States and Canada to design, construct and manage a bridge crossing the Niagara River between Fort Erie, Ontario and Buffalo, New York. The Peace Bridge, as it is commonly known, was opened to traffic in June 1927. The Buffalo Fort Erie Public Bridge Authority (PBA) is the successor in interest to the original international company.

All border crossings are unique. A border crossing should be thought of as a small town with property boundaries and an infrastructure to maintain. The PBA is governed by a ten member Board consisting of equal representation from Canada and the United States. The Board operates like a Municipal Council.

The Authority owns and maintains land in both Canada and the United States. The Authority is not subject to the requirements of the Highway Traffic Act in Ontario. However, designs within the plaza follow TAC guidelines and Building Code requirements. Interface with adjoining Municipalities or Authorities must follow the requirements of those Authorities.

The bridge is 5,800 feet (1,768 m) long, with three lanes, including a reversible centre lane allowing two lane operations in one direction during peak hours.

Figure 1 shows the location of the Peace Bridge Border Crossing in relation to major Transportation facilities in Ontario and New York State.

The Peace Bridge border crossing has undergone many changes since construction of the bridge in 1927. Over the years, the Plaza has evolved to reflect changes in transportation and traffic patterns and changes in public and legislative directions. As the Plaza expands to meet new governmental requirements, it infringes more and more on municipal, commercial or residential land uses. Legislation has changed to improve border security and processing requirements. The design process evolves to reflect these changes. Figure 2 shows the Bridge and Plaza area as it existed in 1950 and as it exists today.

COMPONENTS OF THE BORDER CROSSING

Border crossings are very complicated entities. There are many stakeholders and activities that take place within, and adjacent to, the lands owned by the Authority. Design of the border crossing must consider not only the needs of the traveling public but also the requirements of the various stakeholders. Components of a border crossing might include:

- ÿ Facilities required by the Canadian Border Security Agency (CBSA), the United States Department of Homeland Security, or Customs & Border Protection (CBP) for processing commercial and passenger vehicles and individuals crossing the border
- ÿ Duty Free Facilities
- ÿ Authority Administration Buildings
- ÿ Authority Maintenance Buildings
- ÿ Toll Collection Facilities
- ÿ Parking Facilities
- ÿ Brokerage Firms
- ÿ CBSA Buildings for Public Access
- ÿ Communication Facilities Crossing the Border
- ÿ Communication Facilities within the Plaza
- ÿ Refugee Welcoming Centres
- ÿ Municipal Infrastructure Crossing the Plaza

Figure 3 shows the various components of the Peace Bridge Plaza in Fort Erie.

The components of the Plaza that present the biggest challenge to designers are the areas that process commercial and passenger vehicles. These areas are “secure areas” in that they are subject to regulations imposed by CBSA or the Bridge Authority. Components of the secure areas include:

- ÿ Duty Free
- ÿ Primary Passenger Vehicle Inspection Lanes
- ÿ Secondary Passenger Vehicle Inspection Areas
- ÿ Primary Commercial Vehicle Inspection Lanes
- ÿ Secondary Commercial Vehicle Inspection Areas
- ÿ Refugee Processing
- ÿ Vehicle Impound Areas

You cannot enter Canada until you have passed through the secure areas and have been cleared by CBSA. In the case of the Duty Free facilities, once you enter the Duty Free secure area, you must proceed across the border for inspection on the American side. Figure 4 illustrates the secure and non-secure areas of the plaza.

In some respects, border crossings function like a municipal street or freeway with intersections or interchanges as end nodes. The inspection facilities on the Canadian and American sides of the border crossing are its end nodes. The design and operation of these facilities set the stage for how well the border crossing functions. Traffic flows through the plaza much like it flows through a town or city. Figure 5 illustrates the traffic patterns at the Peace Bridge for inbound and outbound traffic.

SHARED BORDER MANAGEMENT

SHARED BORDER ACCORD

Canada and the United States have the longest undefended border in the world. The objective of Shared Border Management is to create the most effectively managed border in the world.

The environment in which our border services operate is rapidly changing. Travel, trade and tourism along our shared border have increased significantly every year. The ability of both governments to respond to the challenges of this dynamic environment requires that rules, processes, and facilities at the border be modernized to facilitate trade and travel, while at the same time adequately protecting the public, and making optimal use of scarce public funds.

The Shared Border Accord between Canada and the United States was formally announced eleven years ago. The Accord commits the two governments to work together to find a better way to manage our border. On the strengths of this Accord, the PBA embarked on a program of implementation.

The program included:

- Land Acquisition
- Relocation and Expansion of Duty Free
- Road Realignment
- Installation of Infrastructure

All of this work was completed in anticipation of the relocation of the U.S. Customs and PBA Tolls and Administration to Canadian soil.

THE EFFECT OF 9/11

The tragic events of 9/11 have had, and will continue to have, a profound impact on the Border. The creation of the Department of Homeland Security with the amalgamation of Immigration and Customs, the passage of the PATRIOT Act and the Trade Act, the program for frequent, low risk travelers (NEXUS), and Free and Secure Trade (FAST) programs, and the recommendations of the 9/11 Commission in the U.S. have all dramatically affected the operation of the Peace Bridge. On December 11, 2001, in recognition of these new realities, the governments of Canada and the United States signed the Smart Border Declaration and its companion 30-point action plan reiterating, to a large extent, the 1995 Accord. The government of Canada also implemented the Border Infrastructure Fund Program, which is currently underway at the Peace Bridge.

BORDER INFRASTRUCTURE FUND

The Border Infrastructure Fund Program provides funding to border crossings to implement improvements to the operation of Canadian Plazas. At the Peace Bridge, this involves:

- Relocation of Bridge tolls from the U.S. Plaza to Fort Erie
- Construction of truck staging areas and a FAST by-pass lane
- Reconstruction of CBSA inspection lanes and processing facilities
- Relocation of PBA Administration buildings from the U.S. Plaza to Fort Erie.
- Construction of three (3) additional commercial inspection booths in the U.S. to increase commercial throughput by 75% entering the U.S.

DESIGN PROCESS

The redesign of the Canadian Plaza at the Peace Bridge was initiated in response to the following:

- ÿ The location of the American Plaza in Buffalo afforded very little room for expansion to allow efficient vehicle processing.
- ÿ Delays in vehicle processing in Buffalo caused commercial vehicles to back-up over the bridge at peak times to over 6 km along the Q.E.W. Rear-end collisions at the back of the truck queue were frequent.
- ÿ Changes in processing requirements in Canada required modernization of the inspection lanes and administration buildings.
- ÿ The inspection booths at the Canadian Plaza were too close to the bridge. At peak times, traffic would back over the bridge onto the American side, affecting traffic flow on the local streets and freeways in Buffalo.

A conceptual site plan was prepared which incorporated the requirements of CBSA and the Bridge Authority. A major feature of the plan was the relocation of the Toll Collection lanes and Administration buildings from the American side to the Canadian side. The move allowed more space on the American side for redevelopment of the U.S. Plaza and the provision of additional commercial vehicle inspection lanes. This was significant as it reduced the queuing on the Q.E.W.

The conceptual site plan was used as the basis for a RFP by the Bridge Authority to retain an architectural firm for design of the buildings and a civil engineering consultant for detailed design of the site services. Letters of interest were submitted for the architectural work and a short list of firms participated in a design competition. The design competition resulted in a further refining of the site plan. NORR Architects were selected and retained to design the buildings.

Philips Engineering Ltd. was selected as the civil design consultant and, working closely with NORR, the Bridge Authority and CBSA, further refined the site plan and prepared detailed working drawings for tender and construction.

DESIGN CONSIDERATIONS

- ÿ Provide sufficient inspection lanes to process expected traffic volumes.
- ÿ Position inspection lanes such that if there are back-ups, the traffic queues do not go onto the bridge or interfere with other traffic movements.
- ÿ Provide signage to direct traffic to the proper inspection lanes and the community.
- ÿ Provide ample space for secondary inspection.
- ÿ Provide signage to direct traffic to proper toll lanes.
- ÿ Provide proper merge lengths for traffic exiting the Plaza.
- ÿ Separate commercial vehicles from passenger vehicles.
- ÿ Design all roadways to meet applicable Building Codes or TAC guidelines.
- ÿ Build in flexibility to react to changes in traffic volumes and characteristics and CBSA processing requirements.

PLAZA ARCHITECTURE

Border crossings are generally very cold, intimidating and unfriendly places. They are usually located near or adjacent to areas of cultural and historical significance to both the Canadian and American people. The buildings and facilities are the first things you see when crossing into Canada.

The structures on the Canadian Plaza have been designed by NORR to achieve the following objectives:

- To reflect a new Canadian image of confidence and sophistication.
- Pay homage to the history of Fort Erie and the surrounding region.
- Create a space that is warm and friendly.

These objectives are achieved through:

- A strong reference to the historic stone construction of local buildings and fortresses along the Niagara frontier;
- A strong reference to native culture reflecting archaeological artifacts and wooden native shelters and canoe designs;
- The use of wood and natural lighting to make a warm and friendly atmosphere;
- Separation of secure and non-secure areas by treating adjacent buildings and walls as relatively solid stone masses.

BUILDING PROGRAM

Canada Customs and Immigration Building (29,000 s.f.)

Public waiting, counters, interview rooms, bus passenger processing area, detention areas, staff lockers, meeting rooms, lunch room, office and support areas all designed to meet Canada Customs and Revenue Agency (CCRA) and Citizenship and Immigration Canada (CIC) requirements.

Primary Inspection Area

15 booths and associated equipment and canopy.

Secondary Inspection Area

A covered area to inspect 28+ cars and two buses.

Refugee Processing Building (13,000 s.f.)

Public waiting, counters, interview rooms, detention areas, office and support areas all designed to (CIC) requirements. A separate facility, the Peace Bridge Newcomer Centre is part of this building and contains family services facilities, information centre, and X-ray and examination facilities.

Peace Bridge Authority Administrative Headquarters (20,000 s.f.)

Executive and administrative offices, board room, print room and storage facilities, toll collection, auditing and IT facilities, as well as a public lobby. The building will also contain an area for on-going archaeological cataloging and storage, as well as a native Museum/interpretive display area in the public lobby for the Town of Fort Erie.

Toll Collection Area

Six (6) toll booths and associated canopy.

Total building area is 62,000 s.f. exclusive of the covered secondary inspection area, toll booths, custom booths and associated canopies. Figures 6 to 10 show renderings and construction photos of Plaza Buildings.

LAND PRE-CLEARANCE

Further to the Shared Border Accord, on December 17, 2004, Canada's then Deputy Prime Minister McClelland and America's Homeland Security Secretary Ridge signed the framework to proceed with land pre-clearance at the Peace Bridge with the relocation of all U.S. primary and secondary border operations for both commercial and passenger traffic from Buffalo to Fort Erie. The framework, in essence, confirms what was planned in the mid-1990's.

These facilities will be constructed on lands previously acquired by the Bridge Authority. United States Bureau of Customs and Border Protection (CBP) staff have already been working side by side with CBSA staff in processing NEXUS and FAST applications at PBA facilities on the Canadian side.

The two countries are continuing to meet to iron out the legislative requirements to allow U.S. Customs facilities to operate in Canada.

Figure 11 shows a pre-clearance concept for U.S. facilities in Canada.

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Figure 1: Location of Peace Bridge Crossing

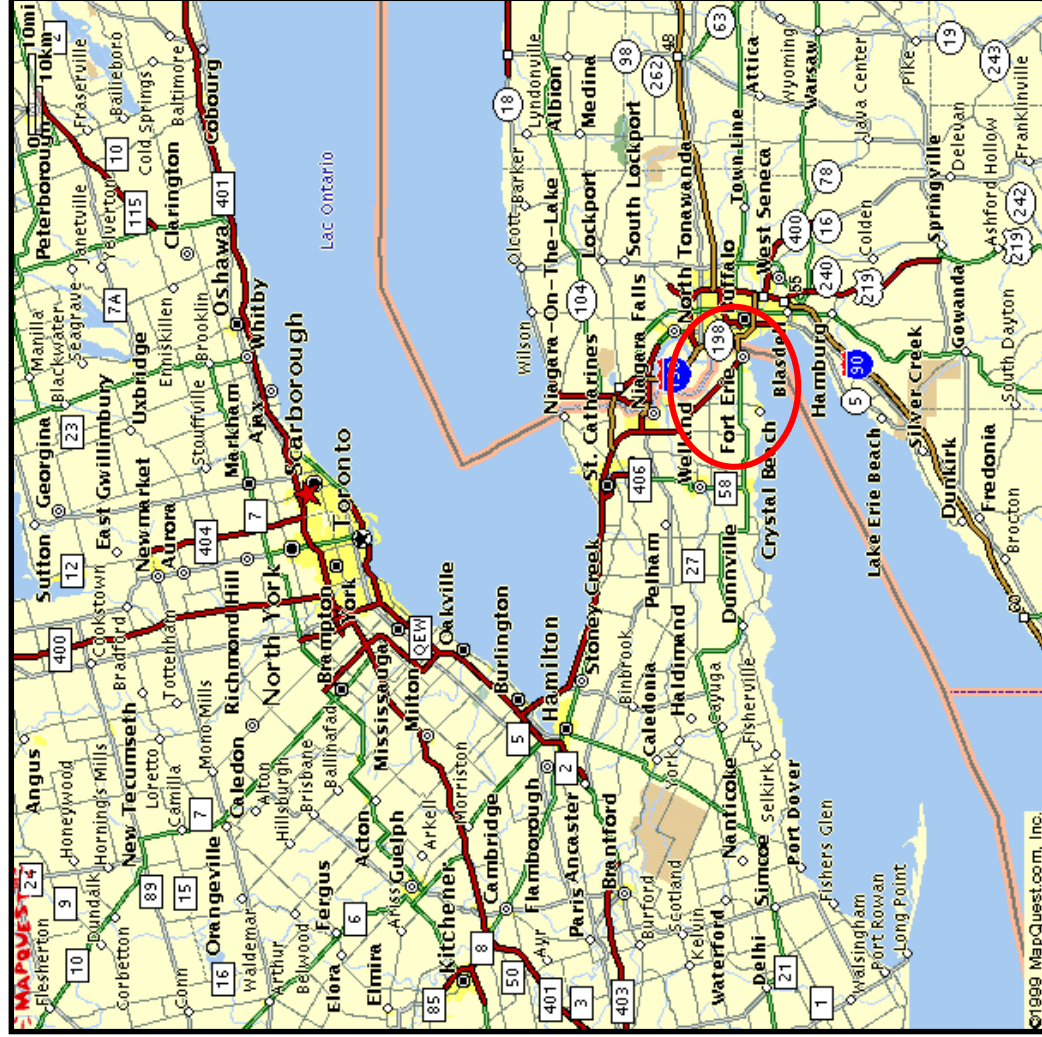


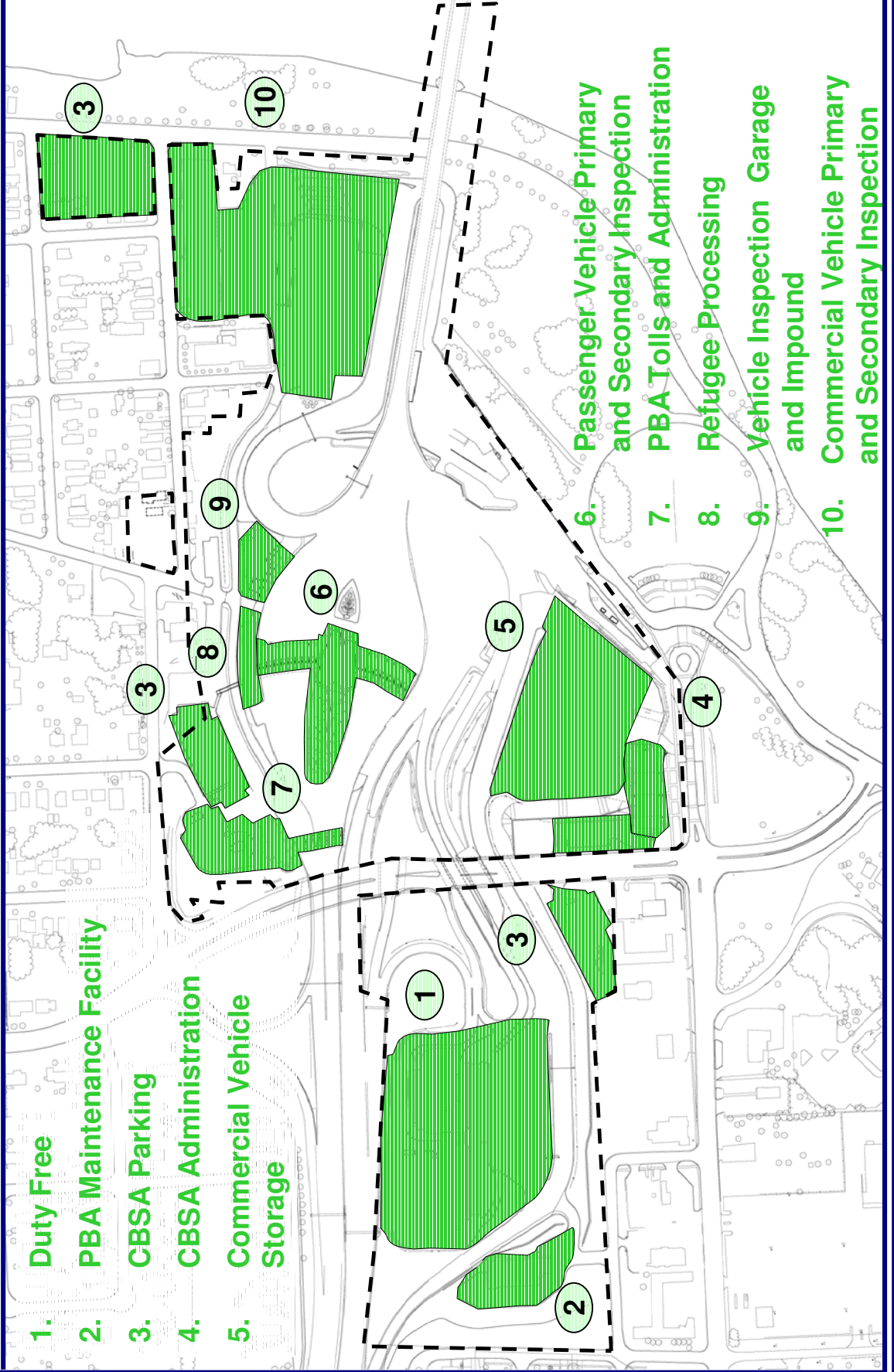
Figure 2(a): Peace Bridge Plaza: 1950



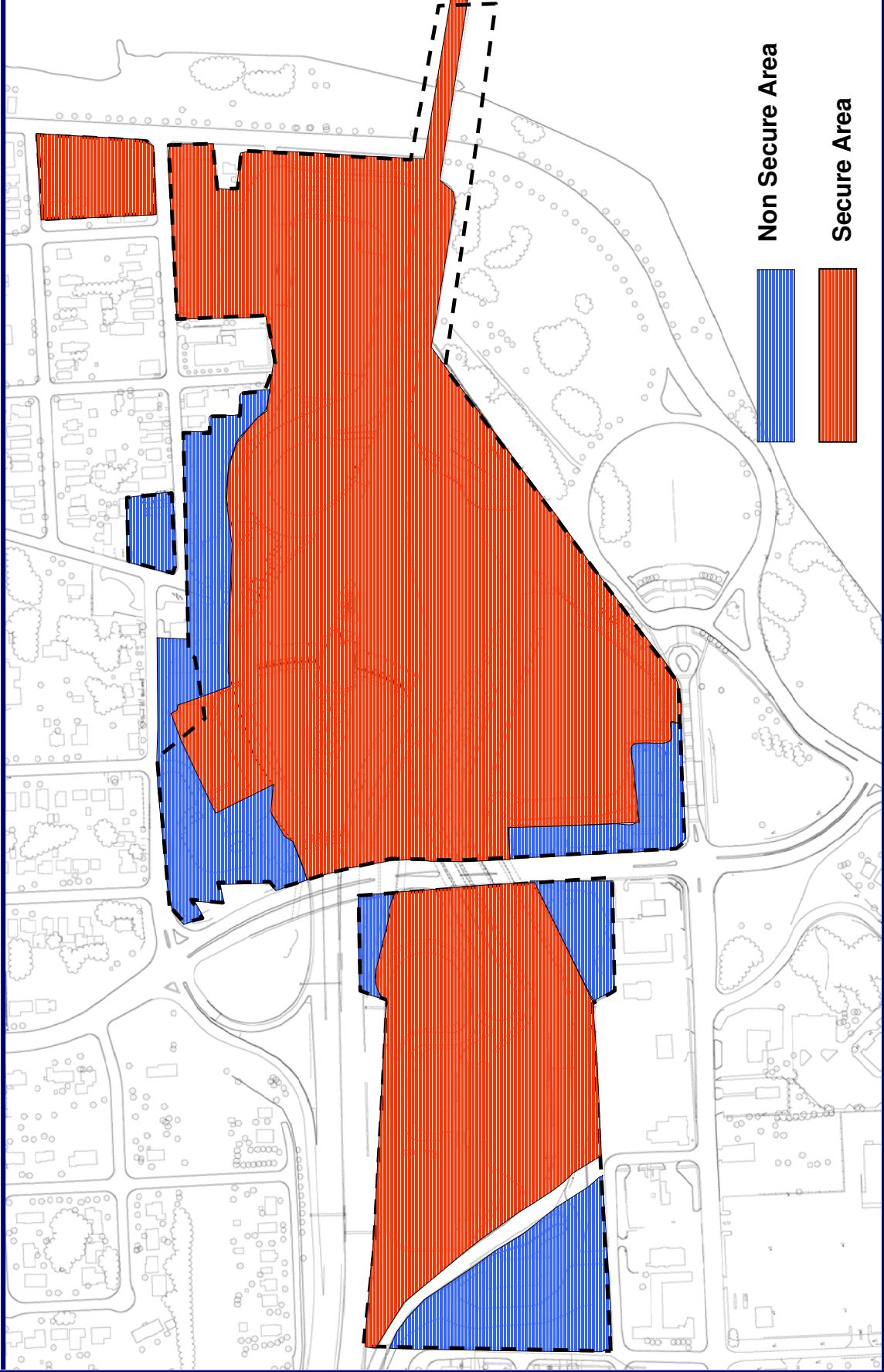
Figure 2(b): Peace Bridge Plaza: Today



Figure 3: Components of the Peace Bridge Plaza



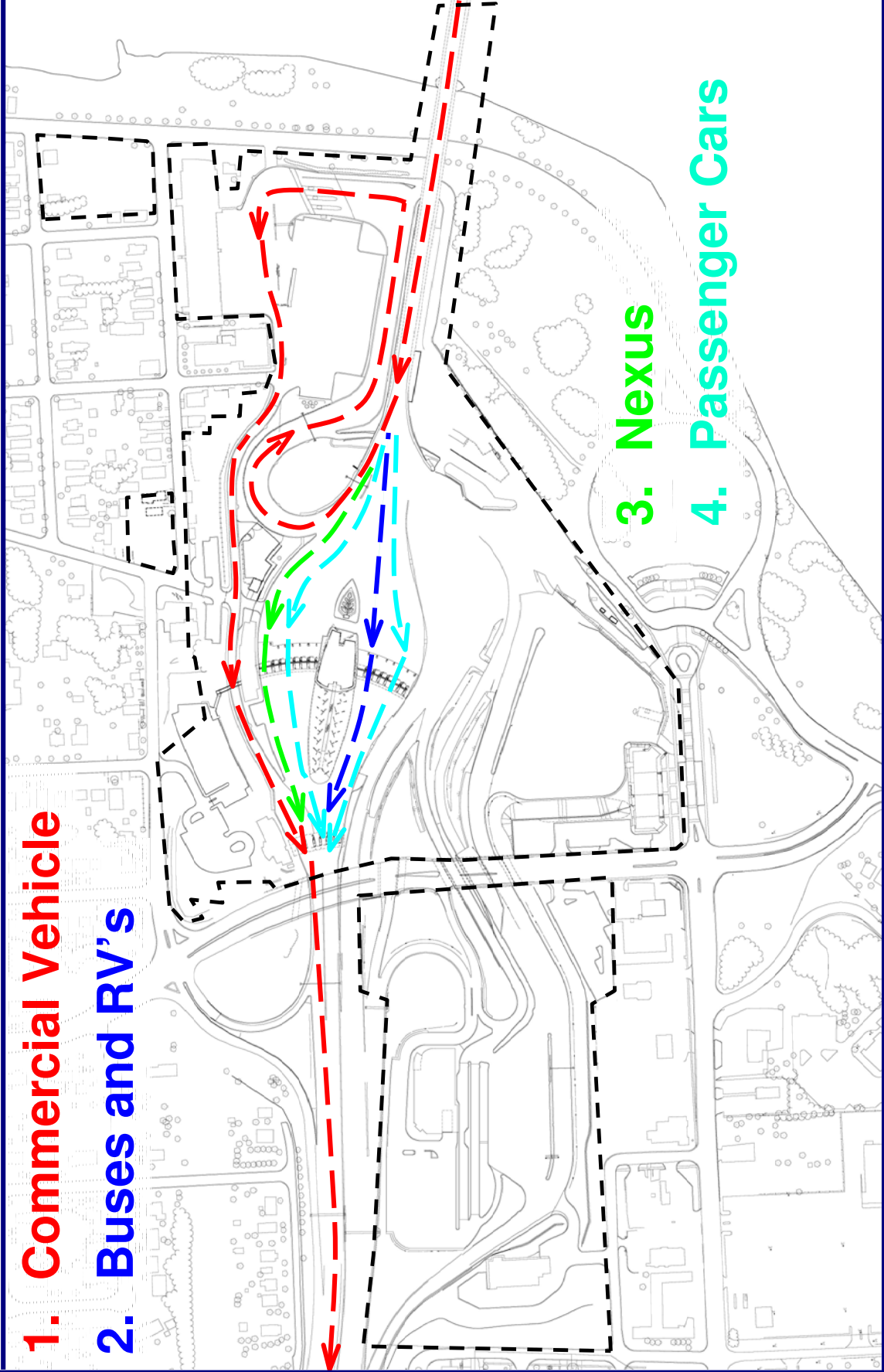
**Figure 4: Secure and Non Secure Areas of the Peace
Bridge Plaza**



**Figure 5(a): Traffic Patterns at the Peace Bridge
Inbound Traffic**

- 1. Commercial Vehicle**
- 2. Buses and RV's**

- 3. Nexus**
- 4. Passenger Cars**



**Figure 5(b): Traffic Patterns at the Peace Bridge
Outbound Traffic**

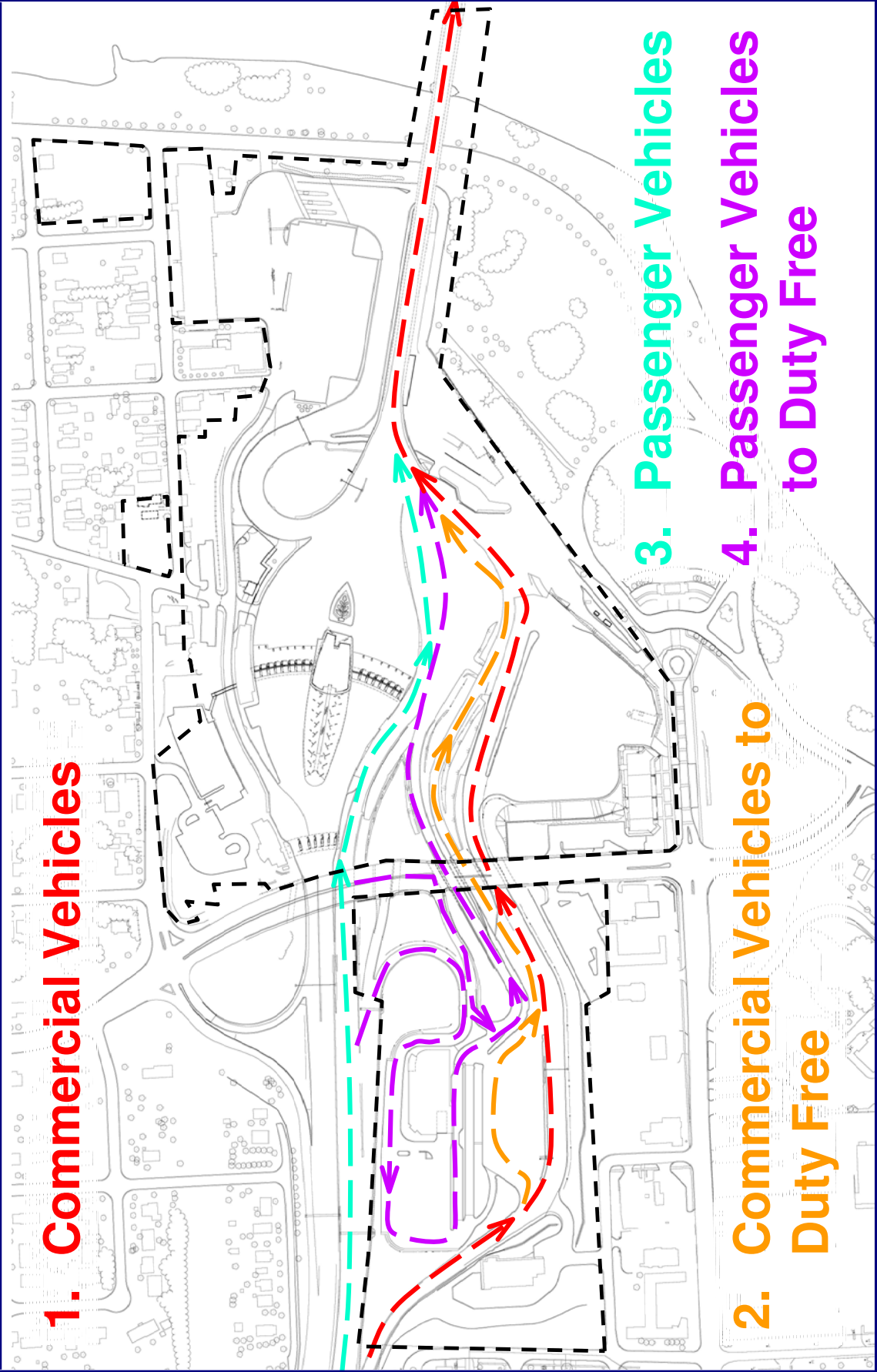


Figure 6: Peace Bridge Plaza – May 2006



Figure 7: Primary and Secondary Inspection

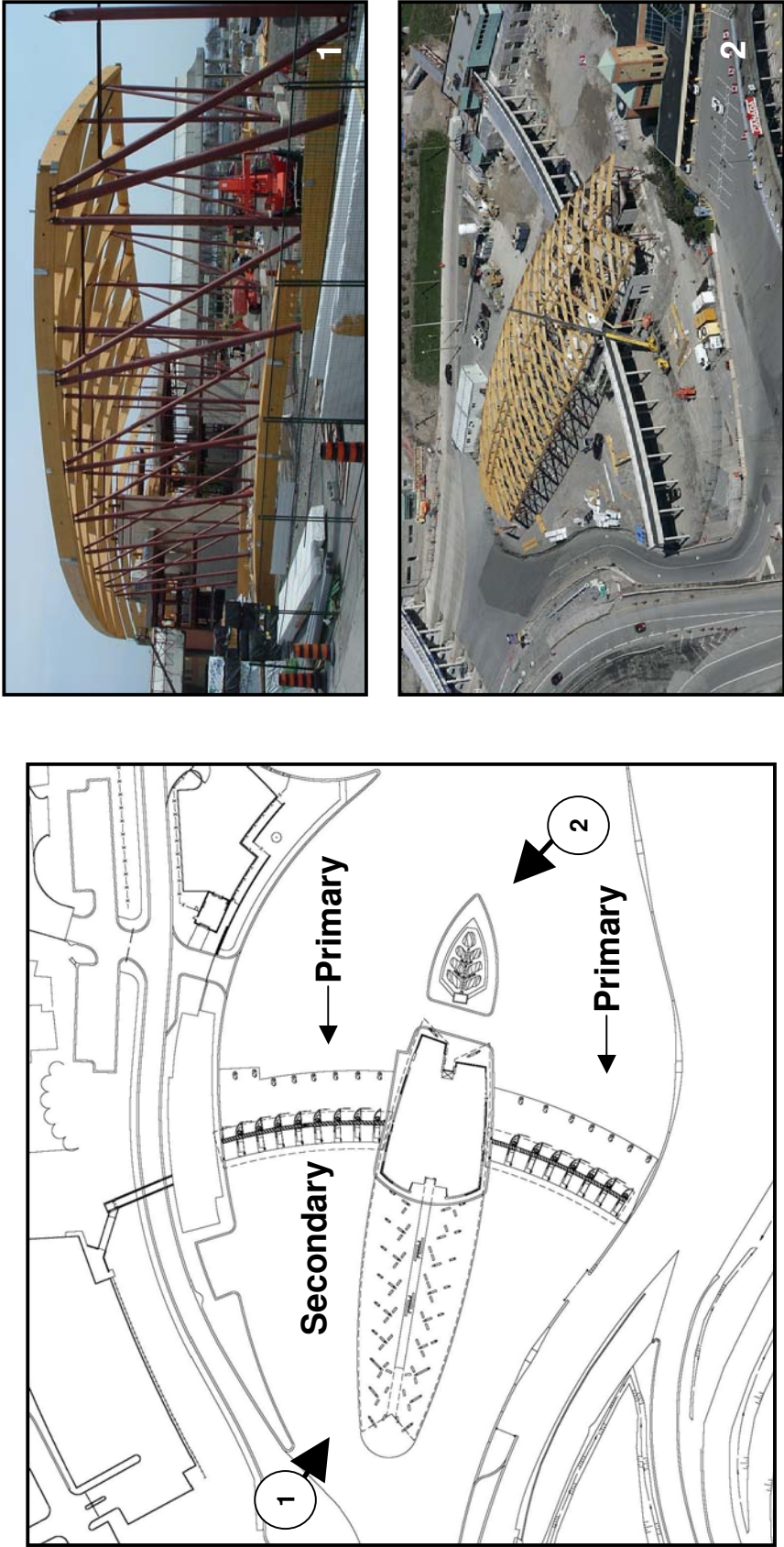


Figure 9: Canadian Customs and Immigration Building

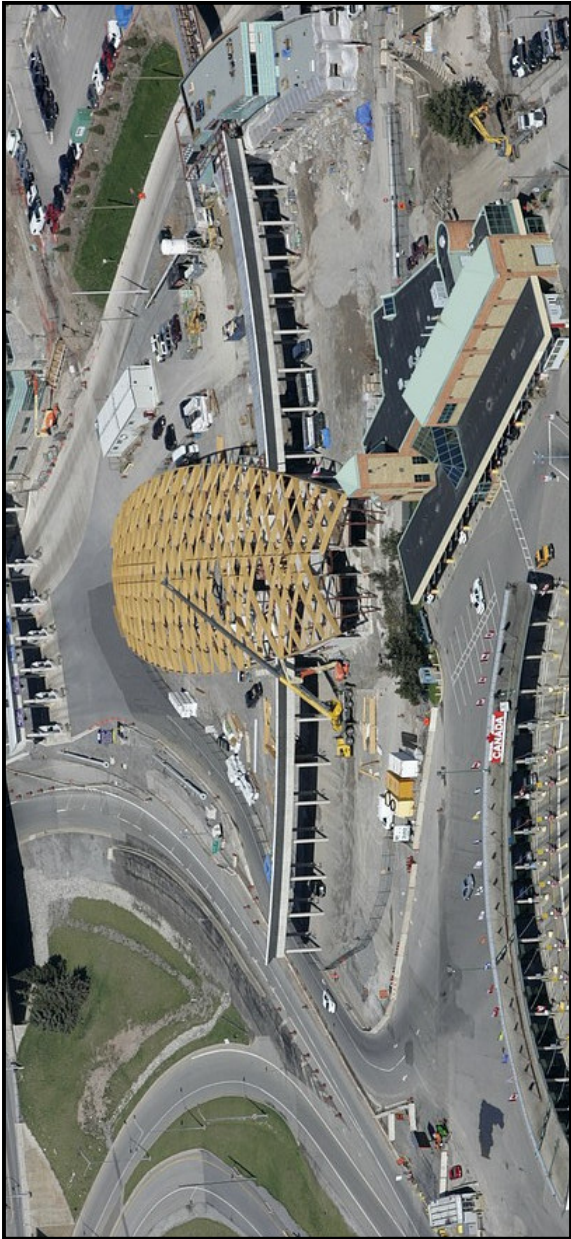
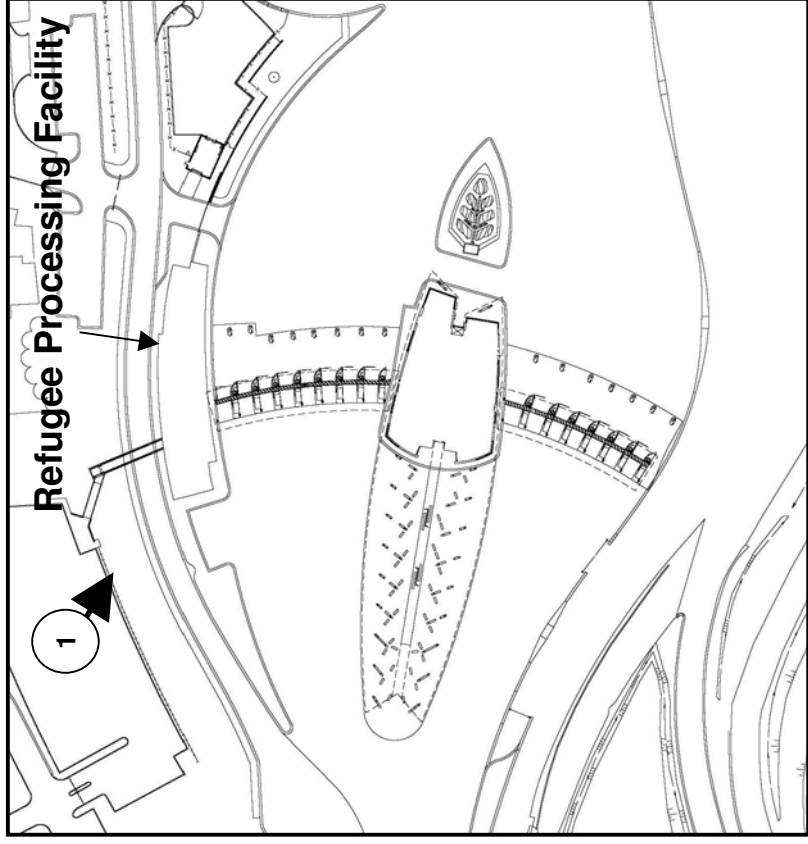


Figure 10: Refugee Processing Facility



**Figure 11: Preclearance Concept for U.S. Facilities in
Canada**

