Lester B. Pearson Airport
Greater Toronto Airports Authority

Old Terminal 1
Decommissioning and Demolition

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TABLE OF CONTENTS

LIST OF FIGURES and TABLES

ABSTRACT

In 1964, Terminal One at the Lester B. Pearson International Airport in Toronto opened for service. When constructed it was considered an architectural masterpiece and lauded as a state-of-the art aircraft/passenger processing facility. This unique circular airport structure was able to efficiently process in excess of 9 million passengers annually. However, with the progressive development of a brand new, much larger terminal facility, the old Terminal One days were numbered. On November 3, 2004, the last piece of the structure was demolished and old Terminal One was passed into the aviation history books.

The purpose of this technical paper is to outline the designed process implemented in the Decommissioning and Demolition of the old Terminal One. Environmental sustainability, a multi-faceted key approach for this immense and rare undertaking, addressed hazardous material decommissioning, demolition methodology, material salvage, recycling and processing.

The decommissioning of hazardous substances (i.e. asbestos containing materials, PCB's, CFC's, lead, bird guano, mould, etc.) was an integral activity and a prerequisite to the ensuing stage of demolition in which the process of salvaging and recycling of the demolition materials structural demolition was of prime importance to the stakeholders.

These issues bring together a framework for the demolition approach in providing cost efficiencies and effectiveness on this large scale, high profile project for the Greater Toronto Airports Authority.

OLD TERMINAL 1

HISTORY

Lester B. Pearson International Airport commenced operation on August 29, 1928 under the name Malton Airport. Its' first recorded official landing was an American Airline's DC3 aircraft. In 1960, Malton Airport, in response to the international use recognition and renown was renamed Toronto International Airport. ([1])

Toronto International Airport redevelopment was part of a visionary Master Plan conceived by the Federal Department of Transport in the mid 1950's. This would give the airport a solid foundation in order to grow and prosper. Toronto International Airport looked to architect John C. Parkin of John B. Parkin and Associates to assist them with development of the overall scheme. Key to this growth was full airport redevelopment with the construction of a brand new terminal building as its' cornerstone project. The concept for the new terminal, due to its' unique design configuration, was considered an architectural masterpiece and a state-of-the art facility and was to be known as Aeroquay One. Construction of the new terminal and associated service facilities commenced in 1958. Prime Minister Lester B. Pearson officially opened Aeroquay One to airlines and passengers on February 28, 1964.

Built at a cost of $27.5 million dollars, Aeroquay One, or Terminal 1 as it eventually became known, was capable of handling 3.5 million passengers annually with an hourly processing rate of 1,400 passengers. The building totalled 56,180 square metres in area. The main uniqueness of Terminal 1 was in its' design, an outer ring structure consolidating its core passenger process services, which allowed aircraft to be parked around its circumference built around a rigorously constructed nine-level parking structure located within the centre square. This unorthodox feature in airport design allowed for minimum walking distances from terminal to aircraft through its 6 fixed aircraft service bridges and 23 boarding gates. Vehicular and pedestrian traffic accessed the parking garage, service, and departure and arrival levels via an underground tunnel structure. The heavy structural concrete roof of the vehicular tunnel served double duty, one obviously being the tunnel roof, the other and probably most significant, as the apron to support aircraft traffic to and from the service bridge passenger gates.

The overall airport development plan envisioned a total of four aeroquays to handle the projected progressive increase in air traffic. This planning was set aside with the introduction of larger aircraft types, such as the 747 jumbo. The circular shape and layout of Terminal 1 proved somewhat inadequate, use of adjacent gates with the newer

[1] Saying Goodbye. GTAA Update. (March-April 2004).; The History of Terminal 1 – the Building. GTAA Update. (December 2003). P.38

wide-body aircrafts became inefficient. Furthermore, the multi-entrance circular shape was unable to accommodate the growing demand for tighter security standards ([2]). It became quite evident that Toronto Pearson International Airport would need additional services in order to meet the increased capacity demands; this ultimately led to the development of Terminals 2 and 3.

In 1996 the Greater Toronto Airports Authority (GTAA) took over management and operation of Toronto Pearson International Airport, changing how airports were managed and operated in Toronto and in Canada. Established as a Canadian Airport Authority under federal accountability principles pursuant to the Government of Canada's National Airports Policy of 1994, the GTAA initiated a $4.4 billion Airport Development Program (ADP) to respond to the rapidly growing air travel demands. With estimated annual projections in excess of 50 million passengers by the year 2020 ([3]) it was clear that major redevelopment was required.

Now considered archaic in terms of operational and security efficiency, Terminal 1's days were numbered. This terminal no longer fit in to the renewed airport scheme. It had to be demolished to make way for the new vision, a massive expandable single terminal designed to serve the future passenger and aircraft demands. Terminal 1 processed approximately 218 million passengers. After 40 years of distinguished service, Terminal 1 was slated to embark on a new journey. The terminal ceased operation on April 5, 2004. The last aircraft out the gate was Flight 862, a departure to London's Heathrow Airport.

The world and Toronto bid farewell to Toronto Pearson's old Terminal 1. The focus of this presentation is how the rubble from this mighty old Terminal 1 rises and lives as part of the foundation for the new airport facility.

[2] McGran, Kevin. Farewell to Terminal 1. Toronto Star. (Oct 1, 2004).
[3] History of GTAA. GTAA Update. (December 2003). P. 24-25

PROJECT DESIGN

DESIGN CONSIDERATIONS

Demolition Safety

Demolition of the Old Terminal 1 structure ([4]) was considered Canada's largest demolition contract prior to 2004. Due to the project's immense size and complexity, the project's priority was focused on safety. Safety perimeter fence, demolition sequence, utilities and services decommissioning, water supply, and fire watch were the main safety considerations items stipulated in the Demolition Plan.

The Old Terminal 1 is a combination of two main structures, the outer ring structure and the centre 9 level parking structure. The two level outer ring structure made up of 4 equal quadrants is a stable structure and does not require any special demolition design consideration. The ring structure can be demolished using conventional methods such as excavators with standard shears and pneumatic impacts hammers.

The centre 9 level Parking Garage was designed and considered for both Explosive Controlled Demolition and Conventional Demolition. The use of explosives within an operational airport brought out safety concerns for the GTAA. Given the high level of risk, security, and safety concerns attributed from the geo-political factors affecting the world, the Explosive Controlled option was shelved.

Safety considerations using Conventional Demolition needed to be considered since the parking structure was built in a combination of 9 separate structures. For example, when contract documents were being formulated, there were discussion and commentary of settlement during construction that contributed to the 9 sections shifting. Each section displaced independent of each other and to hinder movement of these sections, post-tensioned cables were used on the 7th level Parking Garage. Interesting conditions arising from the above required safety consideration in the Conventional Demolition sequencing of the Parking Garage.

Decommissioning

Design considerations involve the following: 1. Utilities and Services Decommissioning and 2. Hazardous Materials Decommissioning.

[4] Figure 1.

Utilities and Services Decommissioning: The scheduling of the Utilities and Services disconnects have to be planned and coordinated between the T1 Demolition Trade Contractor and the GTAA Operations. The information on all utilities and services are consolidated within the contract documents. A site survey by the Trade Contractor confirming these utilities and services are a requirement prior to demolition. This is to prevent any impact to the operations of the surrounding airports since these utilities and services are inter-connected. This process is supervised by the Hatch Mott MacDonald and others and managed by the Construction Manager.

Hazardous Materials Decommissioning: A survey of the Old Terminal 1 is initially conducted by Pinchin Environmental Ltd (Pinchin), the Environmental consultant to establish the location and extent and the recommended decommissioning procedures for these Hazardous Materials. The hazardous materials include Asbestos, Ozone Depleting Substances (CFC's, Freon), PCB, Glycol, Lead, Mercury, Silica and Guano. The decommissioning of these Hazardous Materials is governed by Federal and Provincial guidelines and regulations and the preparation and removal planning; procedures and process have to be accounted for by the T1 Demolition Trade Contractor.

Material Recycling

Material Recycling involves the salvaging process by the owner and the Trade Contractor and the ongoing. Salvaging is an important factor to the overall material-recycling component of the demolition process.

Salvage

The salvaging process involves two parties – the *owner* and *contractor*. This is an important process and requirement as it allows both parties to remove items of value prior to the start and during the demolition.

Owner

The Owner's are considered to be the GTAA, GTAA Lease Holders – Airlines, Tenants – concessions, Federal and Provincial agencies and Police agencies and the Owner's Representative/Construction Manager. They will be provided an allotted time period of 2 weeks immediately after the final closure on April 5, 2004 to appropriately make transport arrangements for removal of the salvageable items.

The Owner's salvageable items are classified into fixed items that are not permanently fixed to the building structure and moveable items that include chattels, fixtures and furniture. These items are listed within the contract documents and will be removed and/or taken at the time the facilities are vacated. Usually all items remaining the time period will become the property of the T1 Demolition Trade Contractor. Security procedures are to be enforced during the salvaging process. Controlled egress and access into the project site is through a secured gate.

Contractor

The Trade Contractor's salvaging processes is two fold, that is, during the initial stages of demolition and as an ongoing process during the course of demolition. All machinery and equipment and all construction components are considered salvageable and recyclable to the Trade Contractor. The Trade Contractor has to carefully schedule the salvaging process in stages in order to facilitate progressive follow-up decommissioning and demolition.

Logistical planning around the project site would have to be implemented to properly manage the movement and storage of the salvaged items from the decommissioning and demolition process. Materials stockpiled in different group types can effectively control this process.

DESIGN CONSTRAINTS

Airport in Use

The Old Terminal 1([5]) was located in the middle of the new apron development between the new Pier E on the west, the currently constructed Pier F on the east and an operational airport taxiway at the south. "Airport in Use" constraints was a specified criteria required by the GTAA, which the demolition contractor had to abide too.

This "Airport in Use" criteria specifies that the trade contractor in their execution of construction, while acting in close proximity to live runways and taxiways, shall not disrupt airport business, shall provide the provision of temporary protection for safe handling of the public, personnel, pedestrians and vehicular traffic and to comply with all operational, safety and security and other applicable requirements.

[5] Figure 2

Debris (FOD) and Dust Control

The Trade Contractor had to conduct removal and clean up of debris and dust to required GTAA standards and guidelines. These requirements include clean up of waste, loose materials and debris, capable of causing damage due to ingestion by aircraft when the construction site is in close proximity to an operational airport. This is referred to as “Foreign Object Damage” (FOD). Failure to abide in the requirements would result in catastrophic consequences towards the safety of the public travelling on the technically sensitive and costly aircrafts. As a result the Trade Contractor provides a Dust Control Plan.

Within the plan, the Trade Contractor is to undertake precautions to control fugitive emissions by employing all necessary means inclusive to cover and/or water sprinkling of dry materials to prevent blowing of dust and debris, the use of temporary enclosures such as tarps and other suitable methods to prevent dust and debris arising and scattering in the air.

Height Restrictions

Parking of equipment and stockpiling of any material are limited in use beside operational runways and taxiways due to its affect on aircraft sight lines, effect on aircraft landing equipment, and FOD. The design constraint included that all equipment not in use should be parked and the tops of stockpiled materials are below a 7 to 1 ratio outside a zone of 150 meters from the outer edge of runway or a 20 to 1 ratio from the outside edge of taxiway shoulders.

Cranes and high reach equipment are required as part of the demolition of the old Terminal 1. Hoisting permits are required for equipment with an overall height of 7.5m and since the structure is in access of 30 metres, special facility permits would be required in advance from GTAA Operations.

Traffic Management

The construction site entrance is located at the east end of the new Terminal 1 development. The site is surrounded by the internal airport road system and the main road arterials such as Airport Road, Derry Road, Highway 409 and Hwy 427. The additional construction traffic from the old Terminal 1 decommissioning and demolition would have a tremendous affect and load on the current capacity of the existing road and highway system.

A Traffic Management Plan would have to be introduced and developed by the Trade Contractor and to be supervised and monitored by the Construction Managers to minimize and control the impact from the movement of these construction material egressions and the construction traffic accessing the site, prior to the start of the project and prior to interface with the public.

The Traffic Management Plan would include as paramount the safety for the pedestrians and public vehicular traffic outside the construction limits; delineated access and egress routes from the site; proper signage; maintaining free access to fire services; provision and maintenance of access roads, sidewalk crossing and ramps as required for accessing the work and other requirements.

ISO 14001

The Greater Toronto Airports Authority (GTAA) has achieved ISO 14001 Registration and has stated its overall environmental objective for the new Terminal Development Project to ensure that environmental factors are to be considered and appropriate environmental protection measures are implemented. Given this mandate, the Trade Contractor has to accept the GTAA's specified and stated ISO 14001 project objectives and targets.

The project objectives and targets call for the following: (1) the reuse and recycle of a minimum of 80% of construction and demolition waste which would consist of concrete rubble, metals, wood and others (2) to remediate a minimum of 90% of petroleum hydrocarbon and glycol impacted soil and/or gravel encountered during the work period.

DESIGN METHODS

Decommissioning

Before accomplishing the above mentioned project objectives and targets for "reuse, recycling and remediation"; Terminal 1 had to be decommissioned of Hazardous Materials such as, asbestos, PCB's from transformers and fluorescent ballasts, refrigerants and ozone depleting substances (CFC's), glycol, guano and other related items.

Demolition

The initial design of the demolition for old Terminal 1 considered two different methods of demolition. They included – 1. Explosive Controlled Demolition and 2. Conventional Demolition. The tender contract specifications where designed with these two different types of demolition for the bidding contractor to consider.

The old Terminal 1 contract was designed and tendered with the two different types of demolition processes prior to September 11, 2001. After that tragic incident involving a terrorist act using an aircraft, the explosive demolition option was shelved for the lesser risk standard demolition process.

Explosive Demolition

Explosive Demolition was considered for the old Terminal 1 because the parking garage had sufficient mass due to the nine (9) levels of parking deck above the ring structure and departure/arrivals and basement levels to mobilize inwards against itself (i.e. similarly to implosion) in order to have a controlled demolition of the structure. The old Terminal 1's parking garage was a perfect candidate to be considered for a "Shot". A "Shot" is the demolition industry language for bringing a structure down using explosives.

The parking garage, departure/arrivals processing area, and the surrounding circular departure/arrival gates had to be decommissioned of all hazardous materials before explosive demolition can be used. There is a considerable preparation process (i.e. time for the decommissioning and salvaging process, time to design and place where the explosive charges are to take place, safety consideration, etc.) before explosive demolition could proceed ahead.

Conventional Demolition

Conventional demolition is the use of pneumatic impacts, shears, grapples, torches and other equipment and methods to destroy and demolish the structure. The equipment used on old Terminal 1 during conventional demolition involved a variety and quantity of Skid Steer Loaders i.e. Bobcat 763 and Cat 246; excavators - Linkbelt 135, Komatsu PC400, Komatsu PC850C; bulldozers – Dresser TD-7; Rock trucks – Volvo A25C and cranes. These equipments had a variety of attachments, such as buckets, shears and crushers, clam and grapples and impact point and sheep's foot pneumatic hammers ([6]).

[6] Figure 3

Conventional demolition can began prior to all preparation processes are fully complete unlike explosive demolition. Level 7, 8 and 9 of the parking structure can begin to be demolished immediately after each level had been fully decommissioned of all hazardous materials and stripped of asphaltic membrane. The process repeats itself for the preceding levels of the parking garage and for the ring structure.

THE CONTRACT

The contract was awarded to Priestly Demolition Inc. (PDI) at a value of $21 million. The contract included, decommissioning, demolition of old Terminal 1, minor modifications to Terminal 2, and D-2 detour demolition. PDI was also responsible for all material recycling and salvage. This paper concentrates on the Old Terminal 1 component of the contract.

SALVAGE

The salvage was an extremely important component to the T1 Demolition Trade Contractor. The sale of salvaged items, that is, ranging from HVAC systems, mechanical and electrical equipment, office & restaurant furniture, appliances, scrap steel, bales, rebar and others, helped in reducing the cost of the demolition.

DECOMMISSIONING

The scope of the decommissioning represented approximately 32% of the overall contract. This in itself was deemed a uniquely large project. The physical decommissioning was performed by AASCO, a division of PDI.

The decommissioning process or removal of hazardous materials such as asbestos, PCB's, CFC's, bird guano, etc. was a pre-requisite to the bulk demolition. The immense scope of the work lent itself to allowing decommissioning to be conducted in stages in order to facilitate progressive follow-up demolition. The main structure was divided into 4 fairly equal quadrants and isolated to allow decommissioning to be performed concurrent with activities in the other areas. Hazardous materials were completely removed under the close scrutiny of Pinchin Environmental Inc., a well-reputed environmental consultant.

CONVENTIONAL DEMOLITION

The scope of the demolition represented approximately 68% of the overall contract. Conventional demolition of the old Terminal 1 started out at the top 3 levels of the Parking Garage, which are Level P9, P8 and P7. Asphaltic membrane used to waterproof the top surface of the parking deck was stripped using Bobcat 763's. The parking garage was a composed of a combination of 9 separate structures with independent expansion joints between sections. The removal and stockpiling of the asphalt was locally stored within each of the 9 sections. Using Bobcats, the stockpiled asphalt was pushed over the edge into a cordoned section at ground level with a maximum of 3 Bobcats working per floor.

Simultaneously, decommissioning of each of the lower levels of the parking garage and the main ring structure was ongoing, i.e. removing asbestos, PCB ballasts, thermostat switches and other designated hazardous materials. The decommissioning process was designed to be ahead of the demolition process.

The apron control tower located at the southeast end of the parking level 9 was decommissioned; the steel structure was cut into manageable pieces and removed using a tower crane stationed at ground level.

Demolition of the concrete deck at parking level P9, P8 and P7 was carried out utilizing Komatsu PC-78. The concrete decks below were shored using jacks to accommodate for the live load of the machinery and demolition debris. Demolitions sequencing involved demolition of the parking deck level P9, removal of debris from level P8 and dumped off the south side ground level of the building. This sequence would continue for the parking level P8 and P7.

The remaining six levels of the floor slab were demolished starting from the east working towards the west ([7]). It was removed utilizing high reach machines stationed at ground level ([8]). The steel columns where exposed and torched cut to produce an inverted "V" at two locations at the base of these columns. Cables where attached at the base and the bottom section of the columns where pulled out, initiating the collapse of the parking structure above. All felled debris, consisting of steel columns and concrete, were removed at the base of the demolition using excavators, bulldozers and rock trucks. The debris was processed into different stockpiles of scrap at designated areas around the old Terminal 1 site ([9]). This procedure was repeated until all the existing parking structure was removed.

The demolition of the ring structure was removed effortlessly using standard conventional means. The demolition commenced from Quadrant 1 and continued in a clockwise rotation towards Quadrant 4 ([10]).

[7] Figure 4
[8] Figure 5
[9] Figure 7
[10] Figure 6

MATERIAL RECYCLING

SITE RECYCLE MANAGEMENT

Concrete Crushing Plant

The concrete crushing plant ([11]) is an Eagle Model 1400 measuring approximately 15 metres in length, 4.5 metres in width and 6 metres in height. It is located at the south end of Hammerhead F (HHF). The concrete debris is feed from the top into the feeder using an excavator. The impactor consists of a drum with 3 blow bars rotating at 1800 rpm crushing the debris to the specifications used for granular subbase ([12]). The crushed material drops onto the first conveyor belt where magnets pickup unwanted stray rebar and metal debris. It is then dropped through a 1.5 metre by 2 metre screen onto a second conveyor belt with the recommended 2" minus spacing. Material that passes the screen (less than 2") is directed towards the finished engineered backfill stockpile otherwise it is redirected to a third return conveyor and feed back for reprocessing. The whole process repeats.

Controlled Crushing Quality

Quality control of the processed crushed concrete achieving the required specified gradation is achieved using a multiple of checks and controls. It is performed by the following steps.

- By taking reasonable steps to achieve the targets and objectives
- The contractor providing their own quality control program by regularly monitoring their crushing activities to ensure proper adherence to the contract's gradation specifications. This is accomplished by Contractor internal testing services.
- Ensuring quality assurance is met by having checks and balances upon supervision and sampling of the processed material by the client's geotechnical consultant - Peto McCallum.

[11] Figure 11
[12] Table 1 – Crushed Debris Specifications

Concrete Processing

The production of crushed material is dependant on the type and size of material the plant crushes and processes. The crushing plant processes and produces an average of 1800 to 2000 tonnes of engineered 2" minus backfill material.
The concrete rubble from the demolition of the old T1 structure amounted to a total quantity of 253,000 tonnes. The concrete comes mostly from the 9 levels of the Parking Garage (i.e. the waffle slabs, beams, column encasements of the steel columns, shear walls and other structures). The concrete is transferred to an on site holding area for crushing and processing. The concrete debris is 100% recycled ([13]) to an engineered backfill with a gradation similar to Granular "B". The processed concrete is used as the apron's subbase holding up the final concrete and HMAC apron structure. The subbase use was a GTAA's requirement.

Steel Processing

Plate and Structural (P&S) are considered ¼" thickness and/or greater Heavy Grade steel. The scrap steel ([14]) is commonly processed from the larger length columns, girders and beams to sizes 4 feet and under. Speciality sizes are considered 2 foot and 1 foot under. The sale of the processed sizes depends mainly on the demand and is determined by which Mill and the size of furnaces it operates. The larger scrap steel is usually torched into manageable short lengths for processing.

Heavy melt scrap is considered to be rebar. Rebar ([15]) are processed into short 1-foot to 2-foot lengths for ease of shipment. A higher scrap material price can be received when processing the rebar to these lengths. Cast Iron scraps are usually underground pipes, valves, manhole covers, culverts and other larger miscellaneous steel sections.

Bale Steel

Bale Steel ([16]) is any material capable of being compressed, such as clean light gauge metal sheets, ducting, siding, lightweight steel or soft metals. These materials are sorted and compressed into bales weighing approximately 700 to 900 lbs each. These bales can be efficiently stacked and shipped onto trailers for processing to scrap vendors and brokers.

[13] Table 2 – Total quantities of Recycled Material
[14] Figure 8
[15] Figure 9
[16] Figure 10

Shredding materials are similar in classification to bale steel, except the materials are not as clean and will be shipped and shredded instead of being compressed into bales. These materials are bulked shipped to a scrap broker for processing.

A total amount of 24,000 tonnes of scrap steel was effectively recycled from the demolition of Old Terminal 1 and remanufactured into other steel products.

RECYCLABLE vs. DISPOSAL

The major materials recycled include scrap metals, concrete, asphalt, brick rubble, drywall and waste ([17]). Scrap metals totalling 24,000 tonnes were processed and stockpiled on site into their own categories; weighed and shipped offsite to be recycled at appropriate steel brokers and vendors locations. 253,000 tonnes of concrete from columns, beams, slabs and walls were weighed, shipped and processed within the site. Asphalt weighing 10,000 tonnes removed from the parking garage and roads within Old Terminal 1 were shipped to be recycled at local asphalt plants. 1500 tonnes of brick rubble, 110 tonnes of drywall, and 2900 tonnes of waste were recycled at various recycling and disposal services.

100% of Scrap Metals, Concrete and Brick Rubble, 99% of Asphalt and Drywall, and 95% of the Waste were recycled. Overall, an average of 98% of the demolition materials were recycled which met and exceeded GTAA's ISO 14001 mandate and target of 80% recycling.

SUMMARY

The following observations – The old Terminal 1 Demolition Project was efficiently recycled and reused. The concrete debris recycled and reused as engineered backfill as part of the foundation supporting the new Apron. The steel recycled and remanufactured into structural steel members, rebar and other steel products.

The Greater Toronto Airports Authority requirement to meet ISO 14001's mandate have been met. And the project's objectives and targets exceeded the required mandate by a huge margin. The Old Terminal 1 Project would be an ideal model for the 3 R's (Reduce, Reuse and Recycle) with the largest emphasis on **RECYCLING**.

The success of the above project is accomplished by the positive attitudes and the full team commitment and involvement by the contractors, consultants and architects, construction managers and especially the GTAA.

[17] Table 2 – Total quantities of Recycled Material

In summary, the old Terminal 1 Demolition was efficiently and successfully recycled.

"From the old, rises a new"

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Specification Documents TP-G02-001 Apron Stage 2 (2004)

TABLES:

Sieve Designation	% Passing
75 mm	*100*
12.5 mm	*40-80*
4.75mm	*25-70*
0.425 mm	*10-30*
0.075 mm	*3-8*

Table 1. Crushed Debris Specifications (Subbase) from Concrete Crushing Plant ([18])

Old T1 Demolition		
Material Category ([19]) **(Quantities rounded)**	**tonnes**	**Percentage Recycled**
Scrap Metal	*24000*	*100%*
Concrete	*253000*	*100%*
Asphalt	*10000*	*99%*
Waste	*2900*	*95%*
Brick Rubble	*1500*	*100%*
Drywall	*110*	*99%*
Hazardous Materials (Asbestos, Vermiculite Panels, etc)	*2900*	*100% Reduction*

Table 2. Total quantities of Recycled Material from the Old Terminal One Project.

[18] Specification Documents. TP-G02-001 Apron Stage 2 2004.
[19] TP-C01-001 Waste Reduction Work plan Summary

FIGURES:

Figure 1: Old Terminal One – Demolition on Level 9 (June 25, 04)

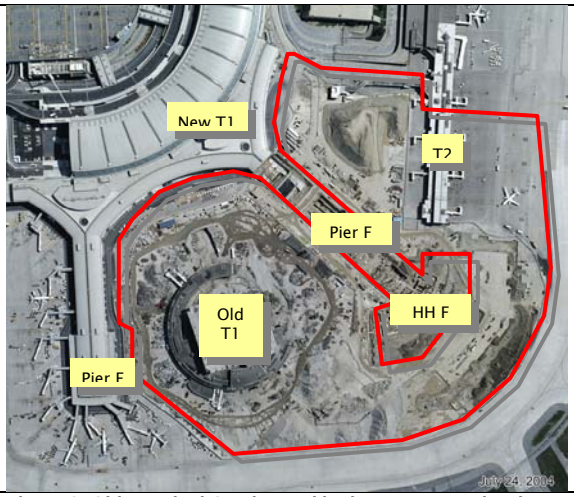

Figure 2: Old Terminal One located in the new apron development between the new Pier E and the constructed Pier F.

Figure 3: Demolition Equipment – Shear (right), Pneumatic Hammer and Grapple (left)

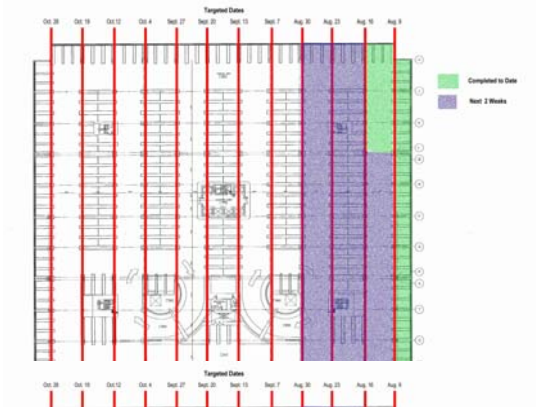

Figure 4: Demolition of the Old Terminal One – Parking Garage Demolition commencing from the east towards the west (Aug 6, 04)

Figure 5: Demolition Equipment – Shear (left), Pneumatic Hammer and Grapple (right)

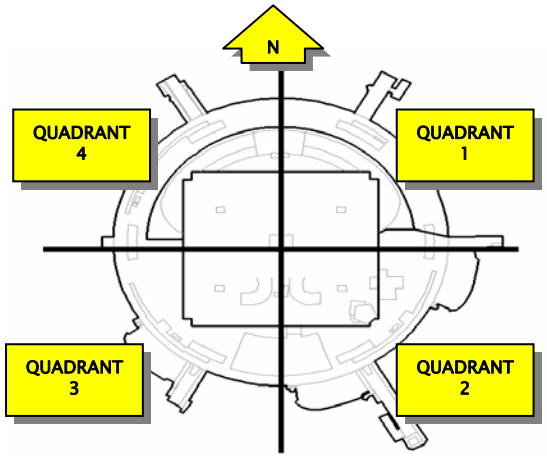

Figure 6: Demolition Quadrants

Figure 7: Demolition Site – Stockpiled Salvaged Material around Old T1

Figure 8: Plate and Structural (P+S) Scrap Steel

Figure 9: Rebar Scrap being processed

Figure 10: Bale Steel

Figure 11: Concrete Crushing Plant and Processed Concrete Backfill