Stairway in a reconstructed French regime house at Place Royale in Quebec City
The old Lower Town of Quebec City today seems to belong to another era. In a few years, the impression of stepping into the past on entering the old quarter will be even stronger. An ambitious restoration project now under way is gradually transforming this decayed area back to the way it looked three centuries ago, in the days of Louis XIII and Louis XIV, of Champlain and Frontenac. The narrow, rough streets, the ancient stone walls dotted with small-paneled windows, the houses of the early French regime are all being restored and recreated with great care and attention to detail.

Like many imaginative, concepts this project had modest—even hesitant—beginnings, but has blossomed and expanded with the enthusiasm of its originators.

It has always been said that Lower Town was the cradle of the civilization of New France. The first houses to be built in the new colony were erected there in 1608 by the men who came to the new world with Samuel de Champlain. Under the dilapidated buildings that cover the area today lie the foundations of these buildings, ready to come to life again under the guidance of 20th century historians, archaeologists, and architects.

The fulfillment of their plans for the old town began with the restoration of the Maison Chevalier, a project that began in 1955; the success of that restoration led to the more ambitious undertaking. In 1960 the Historic Monuments Board approached the Quebec government with a detailed brief recommending the restoration of a number of buildings in the old quarter. The successful restoration of the Maison Chevalier was a convincing argument in favor of their proposal. Initial excavations were so promising and gained such momentum that in 1967 the Quebec National Assembly declared a large section of Lower Town a historic site, and allotted 92,400,000 for the purchase of houses and the support of research and restoration work. A study completed in 1969 set forth a detailed scheme for the redevelopment of the old quarter; the

Bronze bust of King Louis XIV

Chevalier house, backed by as-yet-unrestored buildings, is now a museum of Quebec furniture. It was built in 1752
The big pine table dates from 1635 and originated in the Christian Brothers college at Laval-des-Rapides, Quebec

The following year the provincial and federal governments reached an agreement that provided funding for a five-year work plan. Historians and architects, skilled tradesmen and laborers are now at work making that plan become a reality.

The Maison Chevalier, completely restored, is now a museum of early Quebec furniture. The house faces the St. Lawrence River, an impressive landmark and an inspiration for the reconstruction of what is now called La Place Royale. The redevelopment area is far larger than the modest quadrangle where Champlain built his “Abitation” in 1608, and where a bust of Louis XIV now stands beside the picturesque church of Notre-Dame-des-Victoires. It encompasses a good part of the old Lower Town of the early French regime, where the streets still carry their original names – Sous-le-Fort, Cul-de-Sac, Cote de la Montagne, du Porche, Notre-Dame, and Saint-Pierre. Thanks to careful, detailed research — with the help of old plans and documents that had fortunately been preserved — the foundations of houses, shops, forges and craftsmen’s workshops have been uncovered, and most of their original occupants have been identified.

The first step was to establish the actual sites of buildings and their original owners or tenants; on many of the sites there is nothing but ruins or fragments of primitive foundations. Excavation of these ruins and a careful study of the old foundations and building plans brought to light a remarkable network of underground tunnels, wide and deep enough for the movement of goods of all sorts — including kegs of wine and rum — that were sent in ships from Europe to stock the shops and inns of the new colony. To date, almost 50 buildings and sites have been purchased from their present-day owners, and the research effort has uncovered information about the history of some 76 houses and sites. Most of them have been renamed for their original owners — Laduc, Hazeur, Parent, Eustache — Lambert Dumont, Le Picart, and so on.

Under the leadership of Michel Guasmon, an archeologist and historian who was one of the guiding spirits of the project, detailed notes have been compiled, not only about the technical details of the construction of the early buildings, but also about their owners and the craftsmen who actually did the work on them. For example, it is known that the Maison Hazeur was built for Francois Hazeur in 1684-85; its vaulted cellars were fashioned by a stone mason called Jean Le Rouge; carpenter Jacques Bedard built the mansard roof, which was tiled by a roofer named Robert Pepin. This is the oldest house still standing today, and records say that it was judged the most beautiful house in town by Intendant Champlain.

The completely rebuilt Maison Fornel, close to the church of Notre-Dame-des-Victoires, houses many objects found on the site. As in any archeological project, nothing found during the excavation is ever thrown out — everything has potential significance, even the smallest rusty nail. Inch by inch, with infinite care, the earth is...
closed away, sifted carefully, and analyzed as though it contained gold.

Some fascinating discoveries have been made – a coin dated 1688, portraying Charles X; a seal marked with the arms of Louis XIV; pennies from various reigns; ornately decorated inkwells and possequin pens; huge earthenware pots signed by their creator, Francois Jacquet; a large collection of ceramic plates, meticulously restored; tobacco pipes of all shapes and sizes; copper faucets, pitchers, jewelry and so on. New ‘treasures’ are found every day. For the archaeologist and historian, all these finds are valuable because, through these artifacts, they can reconstruct daily life in the 17th and 18th century in some detail.

The most important discovery so far is undoubtedly the site of the Royal Battery, one of the earliest defense systems in North America. This cannon emplacement was built in 1691 to protect the town from attack; it was destroyed in 1760 and other buildings were later constructed on top of it. Those buildings were themselves destroyed by fire and last year the foundations of the Old Battery were uncovered during excavation.

What is going to be done with all these restored buildings? A dozen or so of the 80 houses to be rebuilt will be completely restored, both inside and out; the rest will have modern interiors, although their exteriors will be as close to the original as possible. The ground floors of some of the buildings will house public services, museums, business and professional offices, colonial-style inns, craft centres and boutiques. The upper floors will be finished as apartments, whose tenants will be committed to respect and retain the original character and appearance of the old quarter.

A reception and information centre is already open on the site, and will continue to function when the restoration work is finished. At the centre the visitor can learn about the history and restoration of La Place Royale. A model illustrating the history of Lower Town is on display; a short film showing the various stages in the restoration work is complemented by a series of old photographs. Free tours are conducted by trained student guides who can explain the history of the area and the work in progress.
Getting it there

Exploring for oil and gas in the Arctic is an undertaking of staggering cost and complexity, in which everything has to be planned a year in advance.

Hooper Island is a barren, wind-swept sliver of land a full 200 miles north of the Arctic Circle. In the depths of winter there are 34 miles of empty, icebound waters between it and the coast of the Beaufort Sea. It's another 56 miles to Tuktoyaktuk, the nearest settlement, a predominantly Inuvialuit village. 'There is little to distinguish Hooper Island from the other islands in the vast Arctic Ocean and for years the only visitors there have been a few wandering Arctic birds. At least that was the way it was until last year. In December, Imperial Oil started drilling on the southern shore of Hooper Island as a pilot it christened Nahrain. Through-
out the winter a 130-foot drilling rig towered over the one-by-five-mile island and 40 drillers exploring for hydrocarbons temporarily called it home.

The industry would have been hard pressed to pick a less hospitable region in which to search. The winter's numbing temperatures, the blistering sun of the summer months, the constant wind and the lack of shelter make it an arduous task. But the company is convinced that the area is worth the investment.

The search for oil in the Arctic is not without its challenges. The local wildlife, including polar bears and caribou, pose a threat to the drillers. The harsh conditions in the Arctic make it difficult to maintain equipment and supplies. The company must be prepared to deal with these challenges and ensure the safety of its workers.

The search for oil in the Arctic is an ongoing effort. The company is constantly looking for new ways to explore and extract oil from the region. The search for oil in the Arctic is a complex and challenging endeavor, but the company is committed to finding new ways to make it successful.
break the tow, then shuttle back and forth moving one barge at a time. With good luck and weather, a tow can make the trip in about a week.

"But you're keyed up in the rapids," says Capt. Cecil Kirkland, head of marine operations at Hay River for Northern Transport Company Limited, the main barge operator on the Mackenzie. Kirkland should know; he was a skipper from 1945 until 1968.

And oil companies are continually searching for new methods of handling to speed things up. By mid-August no new freight can be accepted. By then the commercial barge season is over. Once that ends, the barge track is closed until spring. The companies are already looking at next year's schedule and determining what changes are needed to speed things up.

Crews of men, graved trucks, front-end loaders, plus a few strings of large cranes and a few other items are now on the barge track. The cranes are used to load and unload the barges. The loaders are used to move the cranes and other equipment around.

A new barge is now on the track. It is the first one built since the old ones were retired in 1968. The new barge is longer and has a larger capacity. It can carry more oil and other cargo.

In the meantime, the oil companies are busy preparing for the next season. They are ordering new equipment and planning for the upcoming season.
away the snow for an airstrip big enough to land an Otter. The Otter was used to establish a base and in the meantime a ship was able to load with a D-7 tractor. It cleared the big runway and down came the Herc.

Imperial once tried to work from a coastal airstrip in the high Arctic making rig moves by car trains to reduce the cost. Using a government airstrip at Eureka Sound a train set out to cross the channel to Axel Heiberg Island, some 40 miles away. 'But the ice kept cracking behind them,' says Teskey. 'They could never go back the same way. That was when we decided never to cross salt water channels like that again.'

In the Mackenzie Delta, however, frozen rivers are still considered the best roads. They may be crooked, but they're flat and there are plenty of them. Equipment using them is loaded according to the ice depth. Imperial foremen say there must be six inches with one additional inch for every ten to be transported. Considering that some trucks weigh as much as 40 tons, that's a lot of ice—nearly four feet. They figure quite differently on salt water though—the ice over it must be twice as thick.

Arctic islands supplies are moved from a major supply depot at Sherbrooke Head on Axel Heiberg Island. Shipped there by boat, the supplies then go out by air to all locations. A backup base exists farther to the south at Resolute Bay in case the route to Sherbrooke becomes impassable.

With the Hercules, fuel is the biggest problem—under normal flying conditions a Hercules transport can burn 640 gallons per hour. Drilling rig and aviation fuel are always stored at the well site in equal amounts. 'A lot of provision has to be made when you're using the Hercules,' says Teskey. 'Even crews' quarters have to be supplied.'

Besides aircraft fuel, something else that's in great demand in the Arctic is gravel. At base camps and at drilling sites it is used to protect the underlying tundra. It not only protects the ground from damage by heavy machinery but it keeps the permafrost from melting by providing insulation. It is ideal for such protective purposes, but it is relatively scarce. Last year, Imperial hauled 170,000 yards of gravel from a deposit near YaYa Lake in the delta to camps as far as 55 miles away. It cost $1 million.

When the drilling crews arrive, the site is ready for them. If the drilling operation commences in spring and summer the camp faces the danger of floods on the table-flat delta. For protection against the flooding and also to avoid melting the permafrost, the rig and trailers sometimes rest on pilings. These 25-foot logs, shipped in from the forests of the Mackenzie Valley and set into holes drilled in the frozen ground, cost Imperial about $90 each, installed. All around the site there's the protective gravel pad. This part of the drill site alone—gravel and pilings—can cost Imperial as much as $300,000.

An Arctic rig differs somewhat from its southern counterpart. It is stronger and has much larger motors and pumps. And much more of it is closed in against the weather. It stands some 34 feet higher to accommodate larger-than-usual safety equipment. In Alberta these devices, used to prevent uncontrolled 'blowouts' of gas or oil under pressure, are housed in a cellar under the rig floor. In the Arctic the equipment must be kept above ground to avoid difficulty with the frozen soil.

Underground casing—lengths of large-diameter pipe which keeps the hole from caving in as it is being drilled—is stacked in large piles around the site. More than 10,000 feet of this casing will be needed to do the job.

Just as the Arctic rig is bigger and equipped to handle any breakdowns or emergencies on the spot, so is the crew: an Arctic well has about 80 men on site. Including drill crews, transportation personnel and construction workers, Imperial had about 500 people in the delta area last winter.

Eight hundred tons of food went north to feed them, most of it ordered through two northern suppliers, the Hudson's Bay Company and Inuvik's Ltd., and delivered to Imperial's base camps, mainly by aircraft. The daily bed-and-breakfast bill came to $12,000.

The company recruits northern workers whenever possible but the North is still short of the highly specialized labor needed in oil exploration. So Imperial, like all other oil companies, must bring in many experienced men from the South.

Of all the people Imperial brings to the Arctic, most work directly at either drilling or transporting supplies. About one fifth are specialists, inspectors and visitors.

'There's something very exciting about the Arctic,' says Bob Teskey. 'There are just a lot of guys who want to get up there, just as there are men who don't find it their cup of tea. We have an extremely difficult time trying to find skilled tradesmen. We need electricians and mechanics. And we'd like a stable labor supply. Right now the turnover is larger than we would like.'

'We try to give new guys some indication of what goes on,' says Cliff Kippen, 'but after that they are more or less on their own. One night we had a couple of trucks hauling gravel from a pit to a drill site and the drivers got lost. They followed a truck from another company and dumped at their site. But the foremen thanked us for the gravel anyway.'

Almost everyone traveling to the Arctic for Imperial flies to Inuvik on the company's 80-passenger, four-engine Lockheed Electra, which makes four round trips a week and costs $1 million a year to operate. From Inuvik, two Twin Otters fly the crews and small loads of supplies to the camps; a third serves the Arctic Islands.

Inuvik has an airport terminal, but Imperial operates its own staging office beside the terminal, with dispatchers, a public address system, ticketing and baggage-tagging service, and special racks for baggage destined for various camps. On a crew-change day, when the Electra is disgorging one load and taking on another, the scene is a busy one.

Most employees like the unusual work patterns that apply in the region. While in the North they work weekdays and weekends. After 18 working days, roughnecks, the people who work on the drilling rigs, are entitled to 10 days outside. The Electra—which is staffed with a flight steward who serves hunches on the route—flies them to Edmonton and back. 'Commuting' from work to home can add up to about 35,000 miles a year.

And computing the schedules for hundreds of employees—which once you fly and which ones come back to keep the rigs running—is another fragment of the logistics jigsaw puzzle, another part of the Arctic science of getting it there on time.
The migration of the caribou

Responding to the pull of instinct, these awkward-looking deer trek hundreds of miles twice a year, undeterred by storms, floods and attacks by animals and men.

by Douglas Scott

What passes for spring in the southern Yukon is little more than the end of the blizzards, the days lengthening gradually to eight or nine hours of light. The snow is still deep through the valleys of the Blackstone, Miner and Snake rivers. The temperature along the Trevor Range still plunges far below zero.

But the changes are clear enough to the 65,000 caribou in the Porcupine herd. They begin to move from their winter range in late March, from the rolling spruce forests where they have
Caribou are strong swimmers and, with head and tail held high, they cross the swift rivers undeterred by swirling currents carrying jams of ice.

Caribou can be seen crossing the Porcupine River at almost every point along its length, but the vast majority of the herd uses these traditional crossings. Archaeologists have dug at these points and have found the ruins of old caribou fences and the remains of hunting camps used by the Indians for centuries as ambushing for the migrating caribou.

The crossing points are still used for ambush by hunters from the northern settlements. The same intense northerly urge that makes the caribou such easy prey for wolves during their migration helps the hunters, too. At the Old Crow crossing, the hunters use motorboats, and even the noise of the motors does not frighten the caribou until the hunters have approached closely. Then the animals show alarm, swim wildly away, and present easy targets.

When undisturbed, the caribou swim the river in single file, head and tail held high. They are strong swimmers, and show little fear of the water. When the main herd reaches the river, their crossing becomes an endless procession, stretching almost unbroken through the entire 24-hour span of several days.

Even when the river is choked with fast-moving, the caribou try to cross—drives by the combination of the migratory urge and the pressure of animals moving up from behind. If they encounter ice floes, they clamber up on top of them. As more and more caribou mass the ice, some are forced off, and often the flies will tip. But the herd continues to move and the caribou enter the river without hesitation, swimming strongly towards the north side to continue their migration. Not wolves, but hunters, not even the crushing ice floes, deflect the northward movement.

As they cross the Porcupine River and begin their trek onto the tundra, the caribou encounter more evidence of human activity—old winter roads through the scrub, and seismic lines left from oil exploration. Where these lines run in the direction of the migration, the animals may follow them. On the route near the caribou simply cross them, moving ever north and west towards Alaska.

By June, almost the entire herd has moved west into Alaska. A few calves are dropped along the way on the Canadian side, but most are born on the Alaskan calving grounds, across the most north-
The vegetation at the approaches to a pass through the Richardson Mountains has been damaged by caribou, which often travel in single file.

The vegetation at the approaches to a pass through the Richardson Mountains has been damaged by caribou, which often travel in single file.

Terrorized by snowing ice in the Porcupine River, this group of caribou sought safety by clambering on a large pan. Later, the pan tilted under their weight, and the caribou perished in the crushing ice.

copters are a different story; when helicopter approach at low levels the caribou panic and stampede in all directions. If the helicopters are at higher elevations, the evidence of alarm is less, but it’s still there.

Across the Arctic the caribou come upon evidence, too, of forest fires, almost all started naturally, but an increasing number resulting from human activity. Fires have always burned in the North, and in their wanderings the caribou avoid burned-over areas, skirting them rather than passing through them. Scientists estimate that it takes 120 years for nature to repair the damage of a forest fire in the North, and it’s possible that a large increase in the number of fires could limit the range of the caribou. But they show little alarm at the mere presence of men. The Porcupine herd grazes contentedly within a few hundred yards of the human camp sites set up to observe them. Large numbers of animals gather along the Dempster Highway, often using the roadbed for travel.

By mid-August, the Porcupine caribou begin their southward migration, following the same traditional routes and river-crossings as in the spring. A few animals take the lead and the herd follows in a narrow procession, funneling readily into single file. By early September, the bulk of the herd crosses the Porcupine River and spreads out across the Porcupine Plains. Like the Spring migration, the fall movement is marked by a notable lack of alertness in the animals, making them easy prey to wolves and hunters alike. The caribou linger on the Porcupine Plains, feeding on the edges and grasses that grow there. But if the coming of spring is subtle in the North, the coming of winter is brutally clear. The first blizzard of the season can dump a foot and a half of snow along the Porcupine Plains, and the caribou move south. The rutting season is approaching, and cows and bulls travel together. Often some bulls will pass from one group of caribou to another in search of mates. But the southward movement continues, the snow falls, and the temperature drops.

The herd breaks up into small groups as it reaches its winter range. Caribou prefer soft, low-density snow, no deeper than 20 or 24 inches, with continuous low temperatures, and they move throughout the spruce forests, along the slopes above the timber line, and occasionally onto the plains searching for these conditions. They move apparently freely through snow more than two feet deep, and they wait for the end of the blizzards and the subtle lengthening of the days that will spark the great annual
movement again.

That's the migratory cycle the Porcupine caribou herd has followed for centuries with little change. But change is coming to the North. In the last 15 years the search for minerals has intensified, and in the last five years the discovery of large oil and gas deposits in Alaska, and the prospects for more big discoveries in Canada, have led to growing concern that human activity may conflict with northern wildlife.

The Northwest Project Study Group—now part of the Arctic Gas group of companies—was one of the groups set up to examine the feasibility of a gas pipeline from Prudhoe Bay across the Yukon and Northwest Territories into southern Canada. As well as engineering studies, the group commissioned the first comprehensive and adequately financed study of the Porcupine caribou herd in 1971. The study was co-ordinated by William Brothers Canada Limited, (now Northern Engineering Services Company Limited) and conducted by Renewable Resources Consulting Services Ltd. Most of the information in this article is drawn from the first report of that study.

As well as documenting the migratory routes and behaviour of the Porcupine herd, the study identifies several ways in which the construction of a pipe line might affect the caribou. The greatest danger, according to the study, is that the normal migratory routes of the animals might be distorted. If this resulted in the herd reaching their calving grounds later than usual, it could lead to a much higher mortality rate among the new calves, and endanger the survival of the herd.

Since the caribou were observed to travel along the winter roads and seismic lines over the tundra, the study concludes that they would also be likely to travel along a pipe line right of way if it ran in the direction of the migration. If the right of way varied from the migration route by as little as 45 degrees, they would cross it.

Construction activity could also disturb the migration of the animals, but advance planning can keep the disturbance to a minimum. Since the movements of the herd both in spring and fall are in response to weather conditions, it is impossible to pinpoint the dates on which the caribou would cross any pro-

posed pipe line route. The study recommends that construction camps be advised of the approaching caribou days in advance, so construction could be halted or suspended until the herd had passed.

The compressor stations that would have to be built along the route raise different concerns. The study suggests that they be located in open areas where the caribou can easily detour around them. They particularly warn against locating them on high ground where their silhouette against the sky line would be reminiscent of the insubuk, or 'snow men' that have traditionally been used by the Indians to deflect caribou into ambushes. Any such clear shapes against the sky line will alarm the caribou.

But the most remarkable thing about this study is how much of the information in it is new. It was the first detailed census of the herd. It suggested that the Porcupine herd has a stable and probably growing population. And the census information gathered will provide a basis for comparison with future years so that the impact of both natural and man-made changes can be identified and dealt with. The study expressed concern that major construction activities in the past—including the Dempster Highway—appeared to have a greater potential for adverse impact (on the caribou) than construction of an underground gas pipe line'. As well as permitting a greater number of sport hunters to harvest caribou from the Porcupine herd, the highway may deflect the animals from their traditional migratory routes.

The concern that sparked this study is as new in Canada as much of the information contained in it, but they are both important in dealing with the cumulative effects of such activities as roads, seismic lines, air strips, pipe lines, and forest fires. The clearest recommendation in the report is that all projects in the North require appropriate studies to ensure that their execution and operation will be compatible with all the needs of the region.
Where has all the traffic gone?

by Steve Lynett

Something nice is happening in the centres of Canada's major cities. Pedestrian malls are springing up all across the country, injecting new life into the cities' downtown districts. Wherever they occur, the people love them, business usually improves, and a wave of vitality returns to the cities' core.

"The pedestrian mall makes downtown a place for people," says Norman Pressman, professor of urban and regional planning at the University of Waterloo. "The mall creates a much richer setting for urban living."

Be it year-round or just temporary, a mall adds an essential ingredient to life within the city. It creates a place where people can shop at leisure, meet their friends or simply relax and watch the world stroll by.

"The mall fulfills the human need for visual and sensual stimulation," Pressman adds. "The city becomes more than just a place to move goods and people."

Is the mall concept catching on?

"I'm sure it is," says Harry Billington, chairman of the operations committee for Toronto's Yonge Street mall. "There probably wouldn't be so many today if they hadn't been so successful in the past. People look forward to them."

The mall gives the shopper an opportunity to appreciate his surroundings. More attention can be paid to storefronts and the design of buildings. "Smart merchants will try to improve their stores," says Billington. "A nice face lift can give the whole street a boost, adding life and color to the mall."

Throughout the country, merchants and city councils have come up with an array of malls, some permanent, others lasting only a day. They range from a city block to almost a mile and the decor in each is limited only by the imagination of organizers.

In Ottawa, the 13-year-old Sparks Street mall is an example of co-operation between merchants and city officials. Highly successful from the beginning, the mall has become one of the city's major tourist attractions. In summer, flower, fruit and craft vendors add to the setting of trees and benches that dot the four-block stretch. Glass cases in the street contain a changing art exhibit and in an unusual touch, a row of second-storey boutiques is linked to the centre of the mall by an outside stairway. A people-watcher's paradise, the Sparks Street mall at-

Stretching three quarters of a mile, the temporary mall on Toronto's Yonge Street is the longest one in Canada...
baskets, small shops and an outdoor restaurant.

Of the temporary malls, one of the most ambitious is set up each year on Toronto’s main thoroughfare, Yonge Street. First tried in the summer of 1971, the mall has steadily increased in both size and duration. What began as a four-block experiment lasting one week is now a seven-block, three-quarter-off-a-mile affair that closes the street from mid-June until mid-September. Merchants for another three quarters of a mile north of the mall want it extended, complaining that their business is being lured away. A survey in 1972 showed the Yonge Street mall attracted some 50,000 people per block, per day.

Quebec’s Rue du Trésor, a narrow, cobblestoned street just below the Chateau Frontenac becomes a one-block artists’ studio from June until September with canvases displayed against the stark stone walls of centuries-old buildings.

In Halifax, an experiment on the city’s downtown Barrington Street has resulted in an off-street mall which began June 6. Three blocks of Barrington were turned into a mall in 1971, but fixed overhead wires held trolley buses to the street, where they weaved among the potted plants and benches. This year, to avoid traffic problems, the city has encouraged use of the Grand Parade, a park that stretches from the city hall to old St. Paul’s Church built in 1749. Crowds of office workers join shoppers and tourists to use the benches and listen to the entertainment provided at lunch time.

Traffic and limited parking are the major drawbacks to pedestrian malls. Merchants whose sales go down usually complain that customers don’t like to walk long distances. Says Charlottetown’s former mayor, Walter Cox: “Our people feel they should be able to drive right in the front door. They’ve never had to park two or three blocks from where they shop.”

While parking will remain a problem in most large urban centres, planners generally agree that good public transportation can ease much of the strain on traffic. Says Billington: “On a street of any size it’s inevitable that a mall will disrupt traffic. But the effect can be minimized if alternate routes are available and traffic flow is properly planned.”