

Working Paper series

Pedestrian Friendly Shopping Plaza at M.G. Road, Kochi

By

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CHAPTER I

Introduction

Kochi is often described as the commercial capital of Kerala. It is one of the fastest growing cities in India, with a population of 13.55 lakh¹. Kochi also enjoys the presence of a shipyard as well as an international airport. According to the City Development Plan of the Corporation of Kochi, over the next five years, the investments in the city will amount to about Rs.15000 crore². With investments like the Metro rail Project bound to come in the city over the next few years, it is obvious that there will be an increase in the number of people coming to the city every day, and an addition to the existing vehicle numbers as well.

However, most of the roads in Kochi today are reeling in pollution, congestion, hazardous situations for pedestrians and so on. Some such roads are Mahatma Gandhi Road(M.G.Road), Shanmugham road etc. Today, across the world, most cities focus on sustainable urban designs. Sustainable urban design is about ways to plan, design, construct and operate the buildings and built environments that will be needed as part of a more sustainable society. The focus is both on new developments and on modifications that can be made to existing structures. Such designs often incorporate pedestrianised roads and free their major roads off vehicle traffic. Often, these roads have parking spaces at the beginning of the road, and have park and ride schemes implemented too. Such spaces are often termed pedestrian malls, since these encourage shopping and walking safely. Such roads also have provisions for cycling and other forms of non-motorised transport. Central Copenhagen is one of the oldest of pedestrianised zones in the world³. Many such cities have transformed their most congested motorways into pedestrian zones. For instance, York city, United Kingdom has one of the largest pedestrian zones in Europe⁴.

¹: http://www.citypopulation.de/India-Kerala.html#Stadt_agglo

²: <http://www.corporationofcochin.net/cdpkochi/02Demography.pdf>

³: http://en.wikipedia.org/wiki/Pedestrian_zone#Europe

⁴: http://www.york.gov.uk/visiting/York_city_centre_ped_zone/

Objective of the study:

To suggest a pedestrianised street model for M.G.Road

- To find areas which can be improved for the same
- To suggest feasible measures.

Methodology

The study makes use of Secondary data. Newspapers, Government reports and internet resources have been utilised.

Importance of the study

It is important to think of our streets from the point of pedestrians, than from that of the motorists. This study aims at suggesting measures which will make the road more inviting for pedestrians.

The study attempts to suggest a traffic free model for M.G. Road, for the stretch from Medical Trust Hospital up to Madhawa Pharmacy. This stretch has numerous shopping centres and eateries and entertainment centres on either sides of it. In addition, the stretch of road is very close to the proposed Vyttila bus terminal, at about a distance of 3 kilometres from the junction. The proposed Metro rail system also has 2 halts at M.G.Road, and hence making value additions to the road is extremely important.

CHAPTER II

M.G.Road-Today

Today, M.G. Road, despite being a commercial area, suffers from many drawbacks. According to the "Comprehensive study for Transport system for Greater Cochin Area, 2001", the following are some of the drawbacks of the road:

- On-street parking reduces effective carriageway.
- Inadequate geometrics at intersections
- Absence of Bus bays reduces the road width whenever buses stop.

Apart from the above mentioned problems, there are other problems as well. Though provided with pavements on either side of the road, these are not uniform, in height or in width. The pavements don't adhere to global standards as well. Nor do the pavements have safety provisions. Besides, the poor road markings and design makes it difficult for the visitors.

Also, though a commercial hot spot, the area doesn't have facilities for the shoppers. Hence, it is of utmost importance to revamp the road.

Transportation along the road:

M.G. Road was identified as one of the high demand corridors by Rail India Technical and Economic Services (RITES), 2001. The study of the share of different vehicles in the total traffic volume on the road has revealed that the share of cars varies between 25 to 32%, and the share of two wheelers varies between 26 to 46% while the share of buses is only 11%. Auto rickshaws form about 14% of the total traffic, and the share of bicycles is only 3%⁵. About 12760 pedestrians visit the road each day⁶. Along with this, the road also has a very high crossing pedestrian volume.

⁵: City Development Plan, Corporation of Cochin.

⁶: Comprehensive study for Transport system for Greater Cochin Area, 2001.

Sl No.	Location	Daily pedestrian volume	Peak hour pedestrian volume	Peak hour traffic volume
1	Padma junction	4736	261	4181
2	Shenoy junction	800	158	4194
3	Ground junction	1199	212	4461
4	Pallimukku junction	9967	483	2079
5	Dwaraka junction	4146	204	2079

Source: RITES primary survey, 2000

In addition, the increase in the number of vehicles creates a lot of pollution as well, which in turn affects the health of the public. A study conducted by two officials of the Pollution Control Board found that on a typical working day 142 buses pass through Pallimukku junction between 9:45 a.m. and 11:45 a.m., out of which 104 buses honked the horn. About 319 instances of honking were recorded during this period; most bus drivers honked more than once⁷.

From this data it was deduced that a policeman doing an 8-hour duty is exposed to the sound of horn about 1,200 times. If a bus horn honks, it creates 92-94 decibels (dB) of sound, and hearing it repeatedly can cause hearing loss.

The study also recorded that 96 cars out of 203 cars that passed during the two-hour study period at the Pallimukku junction honked the horn.

Baseline noise recorded on the road when no vehicles are passing is 75-80 dB. Noises which are below 75 dB are harmless. But constant exposure to noise levels of 80-85 dB can increase the risk of hearing loss.

Furthermore, many intersections along the road have crossed the saturation index of 1.0. or are close to 1.0

⁷: <http://www.hindu.com/2008/10/06/stories/2008100657780300.htm>

Sl No.	Intersection	Y Value
1	Pallimukku	1.2
2	Jose Junction	0.8
3	Shenoy	0.9
4	Madhav Pharmacy	1.2
5	Hospital/M.G.Road	0.7

Source: Comprehensive study for Transport system for Greater Cochin Area, 2001.

In addition, an analysis of parking indices reveals that the peak hour parking accumulation is very high along M.G.Road, amounting up to 339 Equivalent Car spaces (ECS). The road also experiences a very high parking demand.

S.No	Location	Car	Auto	T.whlr	LCV	Parking demand(ECS)
1	Ravi Puram to Madhav Pharmacy	1698	972	1891	0	3143
2	Madhav Pharmacy to Ravi puram	2162	1038	2092	0	3723

Source: RITES Primary Survey

It can be observed that the parking problem is acute in M.G. Road. The daily parking demand on either sides of M.G. Road was found to be the highest at 8500 parking space hours. Also, it was found that the long term parking i.e. more than 4 hours was only 5%, while the short term parking, i.e. less than 4 hours was more than 90%.

CHAPTER III

Suggestions

In order to create a vehicle free or pedestrianized zone, there are a number of steps involved. These steps can be segregated into long term and short term measures. Some of these measures have been identified, and have been classified into two phases: Phase I for the short term measures and Phase II for the long term measures.

Phase I

Creating a pedestrian friendly shopping plaza is a long process. However, this starts with introducing pedestrian friendly facilities. We also need facilities that invite more people to switch to walking and other non-motorized transport forms. And to do this, we need a revamp of the existing pedestrian features, as well as introducing new ones.

Revamping the pavements

To start with, the pedestrian traffic must be safely segregated from the rest of the traffic with safe walkways. The pavements should be built uniformly, with smooth and hard level surface. Ideally, a pavement should be about 1650 mm- 1800 mm wide. The width and the height should be uniform throughout, and the surface level type used should be uniform as well. Guard railings and hand railings should be provided for the benefit of the disabled and aged. The height of such railings must be according to the standards of accessible design.

The pavements need to be designed adequately to mitigate the stormwater as well. The pavement type should be porous, so that the water that gets collected on the pavement gets diverted to the drainage underneath.

Removal of features that hamper walkway

Besides, there are features that hamper a free walkway, like transformers and electric posts. The transformers need to be ducted, and the electric posts should be removed. This should be done on link roads and parallel roads as well, in order to increase the carriage capacity of those roads.

Amenities for pedestrians

In addition to making it pedestrian friendly, the road must also be made more attractive and inviting for pedestrians. Certain facilities can be implemented on the road, which makes it more inviting. Restrooms and lavatories need to be provided for those who visit the road. Besides, the pavements should be supplemented with resting areas as well. Standards suggest that resting areas should be provided when a walkway comes to a length of 60 metres. This area should be equipped with benches or other seating facilities, which are about 350 mm-425 mm high. The texture of the pavement adjacent to the seating should be different, so that it enables vision impaired citizens to use the walkway safely. Provision for bike racks should also be made. These will enable cyclists to leave their cycles safely locked. Besides, there should be provision for ATM counters along the pavement as well, which enables easy access for visitors.

Street lighting

Street lighting is a very important factor in enabling safety on the roads. Street lights should be provided along the pavements at frequent intervals. The height of these lamps should be reduced, in order to increase the visibility. These lampposts can be ornamental, adding to the aesthetics of the area.

Proper signage

Also, the road lacks proper signage. At danger areas, like intersections, audible signals should be provided. The visual traffic signals should be visible at eye level, and well lighted. The existing traffic signals should be replaced with hanging signals, and the vehicles should stop a few metres away from the signal. Besides, the crosswalks should have proper pedestrian markings. These markings should be provided on link roads as well.

Regulation of public transport

Public transport should also be regulated, and the bus stops should be designed properly. All the bus stops should have a proper roofing as well as seating facilities. Bus bays should also be built, as these would enable the buses to move out of the traffic and pick up or drop passengers, instead of blocking the traffic while doing so. It is also safer for the passengers. The private buses should be routed off to Foreshore road and Chittoor road, as these create traffic congestion at intersections.

Traffic regulatory measures

In order to reduce the traffic problems on the road, certain regulatory measures have to be adopted. During peak hours, only 2 wheelers and 3 wheelers and public buses should be allowed to ply on the road. This would enable to reduce the congestion on the road, since the road space is being used effectively.

The peak times on the road are: 9 am to 11 am and 4:45 pm to 6:45 pm. Much of the peak hour rush is also due to a clash between office timings and school timings. If the school timing is changed to 8 am to 1 pm, the rush can be reduced. Further more, it would also benefit the students, as they have more of relaxation time, as they reach home earlier, and have more free hours.

Phase II

Making the road pedestrian exclusive

Phase II is the actual implementation phase. Here, the road can be made pedestrian exclusive, with exceptions being emergency vehicles like ambulances as well as government vehicles. However, there will be vehicles which are used to travel to the city.

Parking solutions

In order to accommodate the vehicles which are used for inter-city journey, parking solutions should be identified. There can be different solutions for this.

A multi layered parking system can be implemented for 2 wheelers and four wheelers. Such systems have different types of solutions, like puzzle type systems, pit type systems and elevator type systems. These systems utilize space effectively. More vehicles can be accommodated in a lesser area of land. Such systems have an automatic procedure, which reduces time consumption, and is safer as well.

Besides, smart parking is also an option to solve parking issues. This system utilizes parking bays. Owners park their vehicles in designated bays, by paying a fixed amount based on a rate/hour system. Parking fee machines have to be installed. Users can insert coins into these machines, and punch in their license number and the time duration for which they will be using the parking space. The parking fee machine is usually solar powered, and is tamper proof, and has security locks. Touch screen machines can be provided at the entrances of the road. Such machines display where the parking bays are located, and also display information on where the free parking space is available.

Park and ride scheme

In addition to providing parking solutions for vehicles, there should also be adequate transport system on the road for the benefit of the commuters. For this, a feeder system will have to be implemented. Buses or small trams can be utilized as feeders, and these can pick up or drop off passengers along the street. The feeder can also take people to and fro the parking spaces as well.

Conclusion:

Pedestrianised streets are not a new concept. There have always been streets which have been reserved for human use only. Most of Japan's cities have such streets, which throng with life. Such streets double up as true public spaces for people, and promote the economy as well as culture. Recent research shows that people on streets with heavy motor traffic experience a considerable deterioration of their social lives⁸. When a street has heavy traffic, it forces the public to make a lot of adjustments, to shield against the constant noise, dust, pollution and danger. Pedestrianised areas inculcate a stronger feeling of community, and hence many countries have been adopting the same.

⁸: http://www.livingstreets.org.uk/what_you_can_do/content/traffic.php