A CORPORATION BUILDING FOR COCHIN

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THESIS SUBMITTED FOR THE

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I. INTRODUCTION:

Under the newly formed Corporation of Cochin comes the most important city of Kerala, eventhough the Capital of the State happens to be at Trivandrum. It has got a population of 3.5 lakhs and an area of 83.524 Sq.Kms. The Corporation is formed combining the former municipalities of Ernakulam, Mattancherry and Fort Cochin, and certain other areas, and it lacks a centralised place, where the Corporation Council and the offices could be housed. It is to fulfil this spacial and symbolic need that the building which forms the subject of this thesis project that is, a Corporation building for the city of Cochin, is proposed.

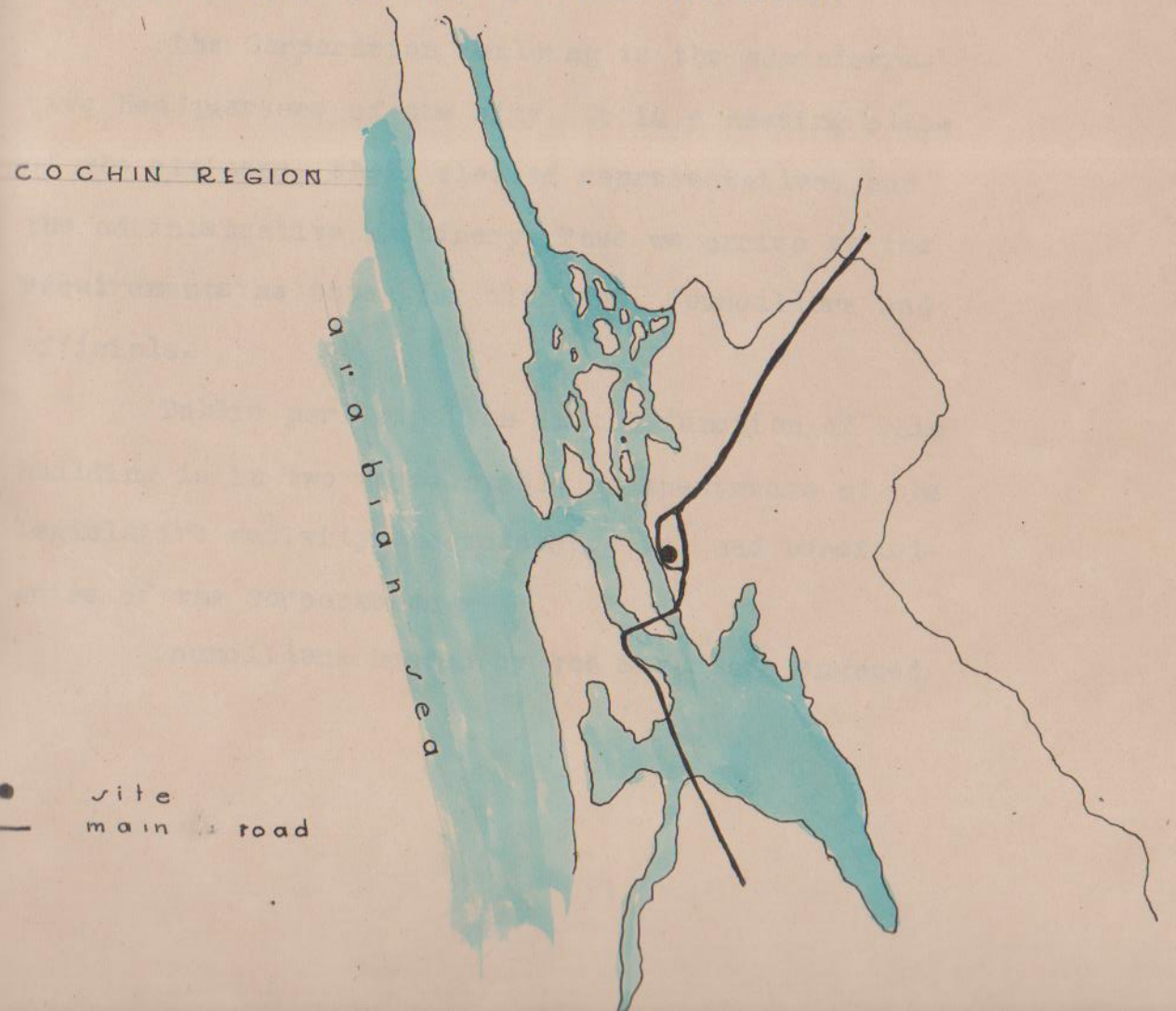
b. NATURE OF SITE:

The Site is level. The ground is soft and clayey due to the nearness of the 'Kayal' or the backwaters and have a bearing capacity of only - 5000 Kg/Sq. Metres. The site commands a facinating view of the 'Kayal' and the Harbour on the opposite bank of it. It is opposite to the only good public park in Cochin, the Subhash Bose - Park. Flanking the site runs one of the most important roads of the city.

The site is now occupied by a few very old and dilapidated buildings which accommodate the Collectorate, Government Press and the District Courts.

All these are being shifted to other places at Thrikkakkara.

The area of the site is about 5.5 acres.



III. ANALYTICAL STUDY OF REQUIREMENTS:

The Corporation Building is the administrative Headquarters of the city. It is a meeting place of the citizens, their elected representatives and the administrative machinery. Thus we arrive at the requirements as those for citizens, Councillors and officials.

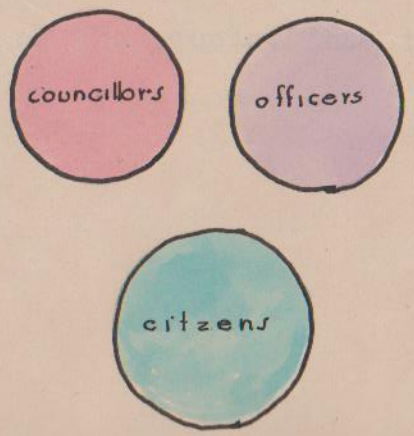
Public participation in the function of this building is in two ways, namely as spectators of the legislative activity and taxpayers to, and beneficiaries of the Corporation.

Councillors headed by the Mayor are engaged

in the legislative activities of the Corporation Council and Serve in the various committees of the Corporation.

The Officials, are the actual implementors of the legislation.

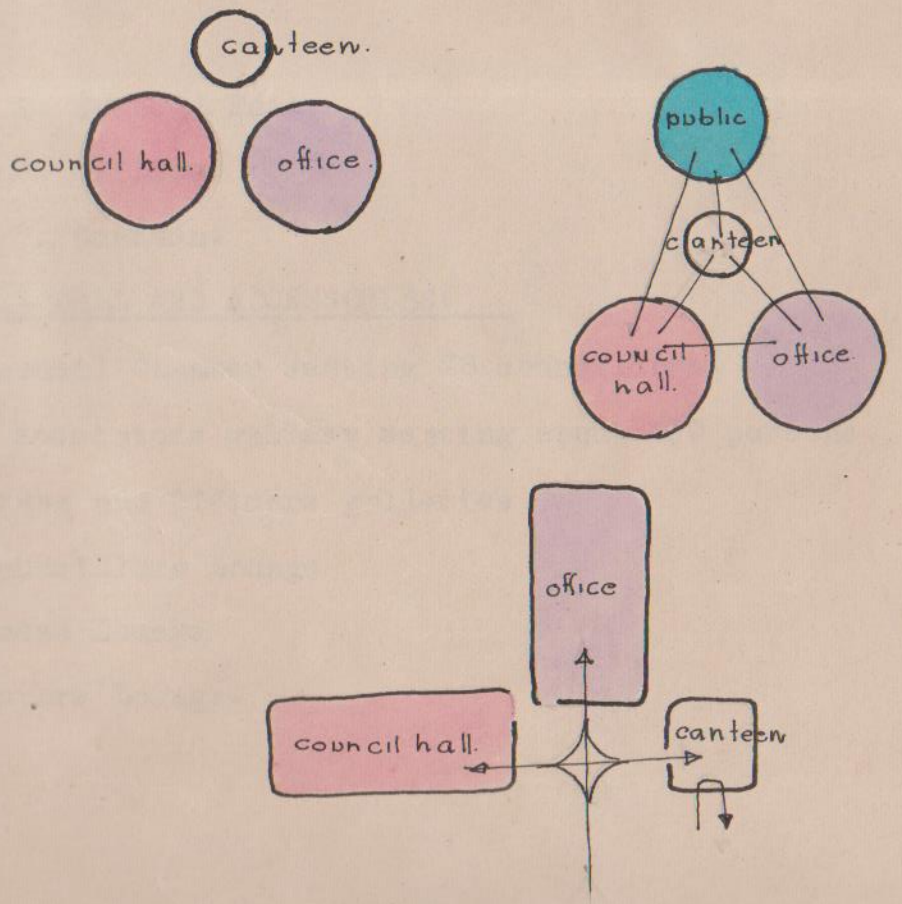
The amenities for these three categories of people are to be provided for, in this building.



IV. DESIGN CONCEPT:

The spirit of the design was evolved considering the loftiest ideals and aspirations of the cit y, which is its people. It is conceived as a symbol of the democratic set up of the City so as to fulfil the needs of the City Corporation spacial ly, structurally, aesthetically and spirituall y. The effort has been to evolve a simple and elegant solution in a beautiful setting, so as to enhance the sense of unity and combined ownership of the people. Thus the building becomes

the manifestation of the democratic equilibrium between the people headed by their elected representatives and the administrative machinery operated by the officials.



V. ELEMENTS OF DESIGN AND DETAIL OF ACCOMMODATION PROVIDED.

As evident from the analytical study of requirements the three elements namely the citizen, the councillor and the officer, guide the special elements. They are mainly three:

1. Council Hall
2. Offices
3. Canteen.

1. COUNCIL HALL AND ACCESSORIES:

a. Council Chamber seating 78 councillors.

b. A spectators gallery seating about 130 persons.

c. Press and Officers galleries

d. Councillors Lounge

e. Press Lounge

f. Mayors Lounge.

g. Sound and light control room and air conditioning room.

2. OFFICES:

a. Revenue section with payment counters (ground floor).

b. General and Accounts sections with Mayor's and Corporation Commissioner's Offices(1st floor).

c. Health Section (2nd floor)

d. Engineering and Town Planning sections (3rd floor)

3. CANTEEN: with kitchen and other accessories.

The detailed accommodation was arrived at on the basis of the proposal of the staff for the new Corporation by the special officer to the Corporation and from studies made on typical plans of city halls in Japan,

Canada and U.S.A.

Parking spaces for a few cars are given under the Council Hall (for important persons only). The rest of the parking is provided at the rear of the building.

VI. SITE AND LANDSCAPE:

The site planning is one of the most important aspects of a building especially when it occurs in a City. The following considerations, went a long way in preparing the layout.

The existin g zoning and townplanning rules in the State.

Proper set back from the boisterous roadside.

The relation between and the utility of the spaces resulting from the placing of the building in the site.

Pedestrians and vehicular traffic inside the site.

The existing landscape features of the site.

A comparatively large and impressive forcourt to the building.

The landscaping also is done keeping in view-the above consideration. Artificial contours are created to break the monotony of the perfectly plane ground of the surroundings.

VII. CLIMATE AND DESIGN:

In Cochin, the climatological and meteriological data can be summarised as the following:-

Latitude	..	9°.59' N
Longitude	..	76°.17' E
Max. Temperature	..	34.6° C
Min. Temperature	..	20.0° C
Humidity (Max)	..	65.95
Wind Velocity(average).		35'.45'/minute
Rain-fall (max)	..	2197.1 Millimetres average

(for the ~~three~~ August months of June, July and September)

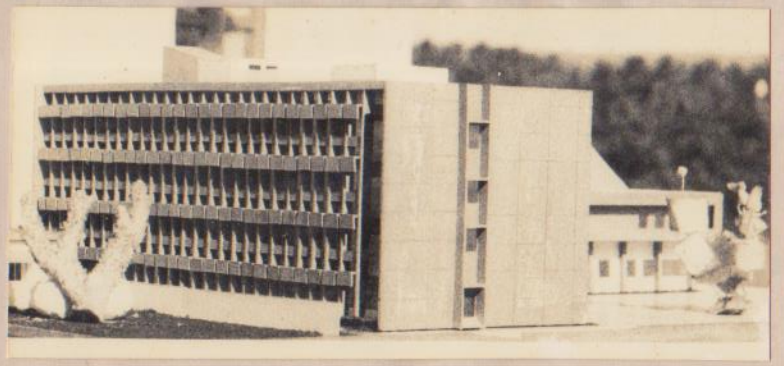
(The temperature, Humidity, wind and rainfall data are according to the observation made during 1956-66 at Fort Cochin Centre).

Being a tropical area, North South orientation

(longer axis east-west) is the most advantageous one to lessen the direct sun and heat absorption. As can be seen from the latitude, the sun will be striking the building at very low angles ($33^{o}.27'$ measured from the zenith) from the south. On southern facade both horizontal and vertical sun protection devices are necessary. It is necessary to certain extent, on North face also. Another advantage of the N.S. Orientation is - that it catches maximum wind as the wind direction at the site is from North West and North for most of the time. The office block enjoys this orientation.

Eventhough the council hall has its longer facade on the west a wide veranda protects it from the western sun. It is fully air conditioned also.

s un control devices



VIII. COUNCIL HALL:

a. Capacity. The council hall is the most important part of the building architecturally. It is a completely air conditioned chamber. Accommodation for 78 councillors is provided which can be increased upto about 90(present strength of the Corporation Council is only 45). As the population growth of Cochin area shows, it may go upto about 10 lakhs in about 20 years or so and the council strength very well may double up. (Other accommodation details are given in the detail of accommodation). It may be used for some other Conference or meetings also because of this provision for additional seating. The visitors gallery is in continuation with the Councillors seats so that even a farely large meeting can be held in the Council Hall.

b. Acoustics.

The acoustics of the council hall is treated in the following way. The Chamber including spectators and press galleries are treated as one room to avoid coupled spaces. The side walls house recessed windows (double glazed). The recesses are treated with absorbants. The ceiling slopes to the rear spectators gallery so as to reinforce the sound towards the rear portion. The sloping wall above the speakers seat also reflects sound to the back rooms. The back wall is also sloping at the top and it reinforces the sound only to the rear portion.

Contrary to the ordinary auditoriums the Council Hall has got an entirely different sound distribution. It is because in an auditorium, it is a one sided talk from the stage to the audience. So a cyclorama or reflecting side walls solves a lot of problems. But in a -

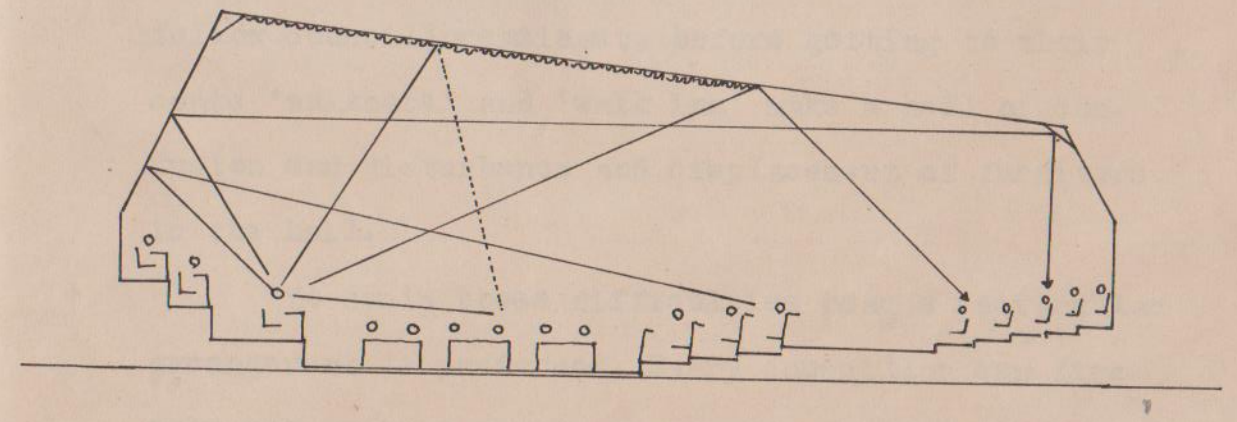
council hall, it has got certain ill-effects because most of the time somebody from the Council speaks, at some point of the hall.

Questions, applauses or other type of noise from all parts or certain parts of the chamber are to be expected. So it is necessary to bring down the reverberation time and bring about a quick dying out of sound. Really it affects the audibility but this diffect can be overcome by a good sound system.

Here in the Council Chamber every individual desk is provided with a small speaker and a microphone. So the problem of audibility arises only at the spectators gallery. It is to some extent solved by the reflective ceiling and sloping walls at the rear and front. Good sound system can enhance the clarity of audibility here also. A prolonging sound at the gallery

will not affect the Council because the human body can absorb lot of sound.

All concave surfaces are avoided from the council chamber beaause of these considerations.



acoustics diagram of council chamber

SEATING:

The seating in a legislative Chamber a most controversial one. In most cases a radial arrangement is preferred. It has got the advantage of a clean solution as far as the slope of the floor is concerned. But another point which is overlooked often in small council chambers is the lack of regular gang ways. A circular arrangment makes it difficult. So the solution forces most councillors to cross two or three fellow councillors, atleast, before getting to their seats 'walkouts' and 'walk ins' make a hell of confusion and disturbance and displacement of furniture in the hall.

To avoid these difficulties hear a rectangular arrangement is preferred. Every councillor can directly get in-to a small gangway from the seat without

disturbing others. This arrangment also gives compactness to the seats because it is not necessary to provide a walk way between every two rows of seat.

The officers and press gallery is given at the rear of the speaker because they need a precise observation of the activities, and need see all the councillors face to face.

d. AIRCONDITIONING:

Eventhough the council chamber is a single room a central airconditioning and duct supply and exhaust are preferred because of easy control and more efficient performance. The inlets of cool air are from under the seats and exhaust ducts start from the ceiling. It works along with the natural flow of heated air.

The Cubic content of the council hall is about

4000 Cu.M. It will be desirable to keep the inside temperature between somewhere about 70°- 80°F, since the relative humidity is about 80% always. For this, assuming a thumb rule of about 265 Cu.M. for each ton of refrigeration, about 15 tons of refrigeration becomes necessary. So only a comparatively small air conditioning plant with well placed inlet and exhaust ducts are necessary for air conditioning.

The inlets of cooled air are all provided in the floor through built in ducts which are lined with heat resistant materials. The exhaust pipes rise up to the ceiling through ducts in the side walls. All the windows are double glazed and doors air tight flush doors.

e. LIGHTING:

Natural lighting is provided through the side windows and two skylights at front and rear of the Chamber.

Artificial lighting completely concealed in the ceiling is given from the top.

IX. OFFICES:

The office is planned on a rectangular grid of 1.5 M x 1.3 M. According to Western Standards the office module is more or less square 1.5 x 1.5 M. In our conditions this module brings about a lot of waste due to the following reasons:-

A table of maximum length 1.3 meters is sufficient in our offices because we do not use mechanical counters, calculators etc which need lot of space. Almost all clerks in a well equipped continental or American Office are provided with typewriters which is not the case here. So a module of 1.5"x 1.3" is taken here, which gives a satisfactory gang way of 1.3 meters, enough for easy inter-communication inside the office space.

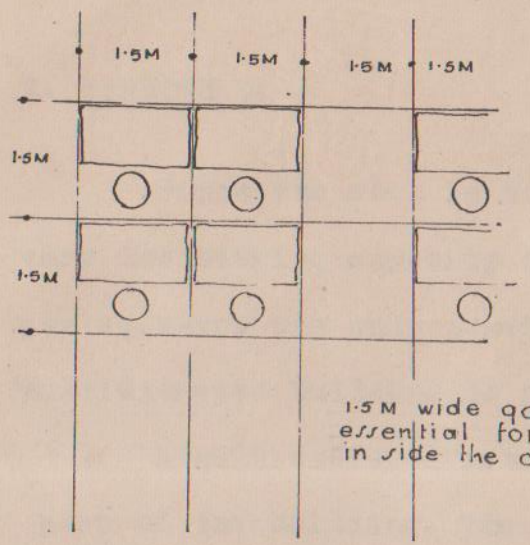
Even if 1.5 M. long office table is used (very seldom in our conditions) in some modules or others, necessary gangway is obtained here also.

The relation between the officers, and the clerks is tried to be made more intimate by avoiding a central corridor and treating the office as a single space.

A falseceiling is given throughout the office to avoid the exposure of unholesome wires and light fittings etc. and for accoustical purposes, Diffused lighting is provided in the ceiling.

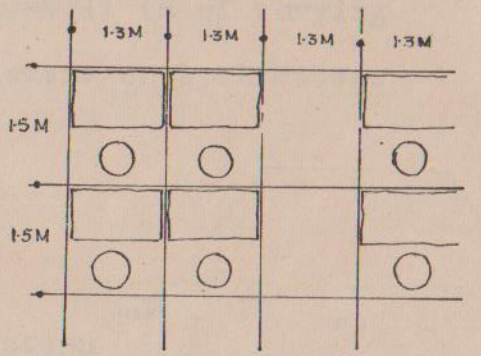
The office accommodation may be increased - through vertical expansion in future if necessary.

office module_western standard



1·5 M wide gangway is not essential for inter communication in side the office space

the following standard is adopted in this case



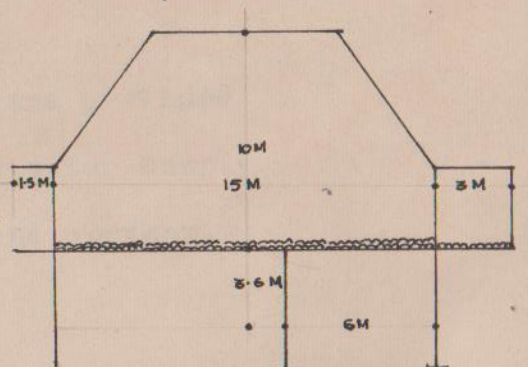
1·3 M gangway is enough

X. STRUCTURE:

Since the soil is soft and clayey with a very low bearing capacity of the order of 5000 Kgms. per sq.metre, the only possible foundation for a multistoreyed building is pile foundation.

A multistoreyed frame supports the office part of the building. The details of spans are given in the sketch.

As to the council chamber a row of gabled portals support the structures. It is of varying shape with two small cantilevers on both sides.



ONE OF THE PORTALS SUPPORTING THE COUNCIL HALL.

XI. SERVICES:

A. Stair ways. Three of them are provided one on each end of the two mutually perpendicular blocks. These serves as fire escapes also. The main stair case penetrates the roof of the office block and gives access to the roof.

B. LIFT. Only a single lift is provided because there are only three upper floors. Its capacity is 10 people. It can convey all the employers in the upper floor in about 20 minutes time up or down. In case of future expansion space for the provision of one more lift is reserved.

C. Water SUPPLY: Two water tanks are provided over the office block for sufficient water supply for all the uses including that in the canteen.

D. SANITATION:

All toilets are provided with concealed sewage pipe system so that the building facade may not be marred with ducts running in different directions. The rain water pipes are provided through the underside of sunbreakers. The pipe of Mayor's toilet is taken through the ~~xxxxxx~~ column.

E. AIRCONDITIONING:

The only airconditioned part of the building is the council hall. Details about that is given under the head as "8. Council Hall, Features and Details".

F. LIGHTING:

The features of concealed lighting in office floors and the Council Hall are described briefly in heads No.8 and 9.

G. FIRE PROTECTION:

Since the exterior treatment of the building facade is mostlyR.C. it gives to some extent protection from fire. The accoustical ceiling of the council hall and offices is made of fire resistant material, thermocole. Fire escape stairways are given on convenient position.

ACKNOWLEDGMENT.

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P.T.O

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