ARCHITECTURE AND THE RAJ

Architecture and The Raj

(Western Deccan, 1700—1900)

SAMITA GUPTA
M.A. Ph.D.

1984

B. R. Publishing Corporation

TO
MY PARENTS

TO
MY PARENTS

FOREWORD

The present monograph on British architecture in Western Deccan has a two fold significance. For the author, Dr. Mrs. Samita Gupta, it is the completion of a fairly intensive study, a pleasant excursion in slightly unknown waters. For the author of these few lines, it represents the conclusion of a plan of systematic investigations in the cultural history of the Deccan, especially of Medieval Deccan. It is not a matter of accident that these studies should be sponsored by the Deccan College. Although it dips into the distant past and reaches out for distant regions, the Archaeology Department of the Deccan College had since its inception kept in mind the need to investigate into periods not so far removed and regions much nearer. One of its earliest students delved deep into all aspects of the archaeology of the Deccan—architecture, epigraphy, numismatics etc. This was followed by studies in the Islamic architecture of the region, in the architecture of the Marathas, in the paintings of the region, and now in the Colonial period.

As a student of history, Dr. Mrs. Gupta has brought to bear on this study of the tectonic activity of the foreign rulers a deep understanding of the socio-economic ethos in which they were working. The stylistic analysis of the various monuments of course forms the core of the study. Her conclusions would be interesting to students of Indian architecture as well as of Deccani culture. It is to be hoped that she will continue her efforts in the field and enrich our fund of knowledge of Deccani culture.

M. S. Mate

28th April 1984
Deccan College
Pune.

ACKNOWLEDGEMENTS

Being a student of history, I have undertaken this foray into the realm of architecture with some trepidation. A sincere love for the old monuments of history, and the fear that these may soon be lost in the inevitable destruction which follows the processes of 'modernization' or 'progress', has, however, spurred me on to take up this study.

To me, it has been an adventure, and from the very beginning I have had the enthusiastic support of all my friends, colleagues and family. It is a pleasant duty to thank some of them in these pages.

Most of my work was done at the Deccan College Library in Poona, where the staff cheerfully helped me throughout. My thanks are also due to the staff of the Bombay Archives, and that of the Royal Institute of British Architects (Drawings Collection), London. I am also indebted to the members of the staff of the India Office Library and Records in London for their assistance in selecting some of the illustrations.

I have received courteous co-operation from various Government Departments which made available the many plans and blue-prints required by me. In this connection I must mention Shri S.V. Tembe, Deputy Secretary, Education Department, Government of Maharashtra, who helped me considerably; as also the Drawing Offices of the Executive Engineer, Poona; the Executive Engineer, P.W.D., Presidency Division, Bombay; the Chief Engineer's Office, Southern Command, and the Public Relations Department of the Western and Central Railways.

For the photographs, of Bombay, I wish to thank Shri Srikant Malushte who found time to roam the city with me; for those of Poona, I thank my father, Shri Joydeb Gupta, Alok Upadhyaya, Mr. and Mrs. T.N. Pundole, and Kaushik Gupta.

I am very grateful for the hospitality and help extended to me by Lt. Col. Surendranath in Bombay, and Capt. and Mrs. R. Nath in London. Their cheerful and unstinted generosity can never be forgotten. Mrs. Meher Deboo, found the

time to type the original manuscript inspite of many pressing duties, and I thank her for her enthusiastic involvement in the project.

I thank Mr. Foy Nissen for taking a continuous interest in this work and sparing his valuable time to help me in many ways.

The British Council helped me with a grant-in-aid which enabled me to consult material available in London. The Indian Council of Historical Research provided a grant for the typing and presentation of this thesis. My grateful thanks to both institutions.

To Dr. Mudgal, Principal, Nowrosji Wadia College, Pune, I am indebted for sparing me from college duties whenever the exigencies of research required it.

My greatest debt is to Dr. M.S. Mate, who taught me to look for, and understand the silent messages sent across centuries by the builders who spoke through stone and mortar, and also helped me throughout in unaccountable ways. Without him this work would not have been attempted.

I am thankful to Smt. Nityaleela Gupta for much practical assistance; to Lt. Col. Jayanta Gupta for his constant encouragement and willingness to take over many domestic burdens, and to Kaushik and Sumanta for their good humoured cooperation—all of which have enabled me to get through the years of study.

My parents, Joydeb and Chitrita Gupta sustained me through the inevitable moments of despondency, and their faith in me has been a source of constant inspiration. To them I owe much more than thanks.

Samita Gupta
Pune, 1982.

CONTENTS

LIST OF ILLUSTRATIONS

Jacket—Government House, Ganeshkhind Part of Rear View.

CHAPTER ONE

INTRODUCTION

Architecture alone of all the arts, is vitally connected with the day to day life of man. The sheer mechanics of living make it necessary for man to create a built environment. On the other hand, the built environment will not serve its purpose unless the builder identifies himself with it. If what he has built reflects faithfully his habits, tastes, economic conditions and even his ambitions, it becomes a mode of self-expression and acquires special characteristics, that may be called architecture. If the physical and spatial forms correspond to the traditions, hopes and lives of a people, then that architecture becomes the mirror of society.

The architecture of the Europeans in India was a foreign graft on tropical soil, and to understand it, we have also to examine briefly the economic pressures, social mores, and cultural roots of the Europeans who created this architecture. If we accept the idea, that the built environment tells us vital facts about its creators, then a study of European architecture in India becomes important in as much as it helps us to understand the cultural and colonial ethos of the Europeans who ruled in India for two centuries.

Upto now, scholarly attention has mostly been turned towards the architectural splendours of ancient and medieval India. The two hundred and fifty odd years of European presence in India in architectural terms have been largely ignored. Very few scholars have touched on these as detailed subjects of study. One of the earliest works which made an evaluation of colonial architecture was that of James Fergusson. In his 'History of the Modern Styles of Architecture' first published in 1862, he devotes an entire chapter to the subject, with his own critical assessment of the future of colonial architecture in India. Another scholar who took notice of these European structures was Percy Brown, in his 'Indian Architecture : Islamic Period', published in 1942. In a very brief outline of two and a half pages, he traces the growth of the special architecture of the Europeans

and discusses the various styles which were important and their suitability to Indian conditions. During the years when the great debate on 'style' was raging around the building of New Delhi, Havell also included a chapter summarising the work of the PWD and contemporary architects in India in his book, 'Indian Architecture'.

The best known and in fact, the only full-scale study has been done by Sten Nilsson whose book 'European Architecture in India, 1750-1850', was published in 1968. For the first time, colonial architecture was studied in depth, and an attempt made to understand it. Being a pioneering work, this was necessarily a broad survey of all European architecture in India. That is, the efforts of the French, Dutch, Danes and English were all surveyed by him. The study also set itself a time-limit, as all studies of such kind necessarily have to. The period chosen, 1750-1850, saw the construction of various types of classical and baroque monuments, and Nilsson's survey covers all these. But the later structures have remained ignored. Moreover, very little space is devoted to western India.

Colonial architecture in Western India has been partly surveyed by Gritli Von Mitterwallner's study in German, on Chaul. But this deals only with Portuguese architecture.

The architectural contribution of the British in Western Deccan has not yet been touched upon in detail by anyone. Lately, much interest has been generated in the Victorian buildings of Bombay, and Gavin Stamp delivered the Sir George Birdwood Memorial Lecture in February 1981, on the subject.

It is indeed time to take a deeper look into European architecture as it manifested itself in India, and try to place it in its historical context.

The architecture of the Europeans is scattered widely all over India. Mainly due to the vast amount of structures, it has been necessary to limit this study to a small area. The structures surveyed and the developments discussed are mainly confined to the city of Bombay, and Western Maharashtra. The main concentration of buildings is in Bombay, and the lesser number in Poona. A few structures and the cantonment patterns in places like Ahmednagar have also been discussed.

The period of study chosen, is roughly from 1700 to 1900 A.D. This span of time, allows us to take an overall look at the architectural forms and their evaluation from the very beginning of the British association with Western India, to the end of the Victorian era. Further developments of the 20th century leads on to new currents, and lack of space does not allow the inclusion of the monuments of the last half-century of British rule.

The primary sources for a study of this kind, are obviously the monuments themselves, and these have been surveyed separately. However, the problem here is that the extant buildings seldom antedate 1860, with a few conspicuous exceptions.

Knowledge of earlier structures therefore had to be culled from accounts of contemporary travellers, old paintings, sketches and lithographs made by visitors and artists. Other relevant information has been found by the arduous sifting of unpublished Government manuscripts such as the files of the Public Works Department, and the Public Consultation Papers of the Bombay Presidency Government.

Amongst secondary sources, the most useful were the various gazetteers dealing with the Western Deccan area. A number of tourist guide books, give important snippets of information regarding individual structures. In this connection, the most useful were, Maclean's 'Guide to Bombay', published in 1891, and Murray's 'Handbook for Travellers in India, Burma and Ceylon', 1901. Many other published works and some journals were also consulted.

An attempt has been made to give to the European architecture of the Western Deccan a historical setting, and a social background, and to briefly examine its traditional roots. The tectonic traditions of the host culture on which it was planted has also been briefly discussed. The patterns of urban growth from the early enclave stage to that of a full-fledged city, with suburban settlements have been discussed. Individual structures have also been separately treated as far as possible. By these means, an attempt has been made to see whether the architecture that was imported met the functional needs for which it was created, and whether this exotic plant was able to take root and flower on the foreign soil on which it was implanted.

CHAPTER TWO

PROLOGUE

II A. HISTORICAL SETTING

The architecture created by the Europeans was not done so in a vacuum, and a study of its genesis or culmination has to be accompanied by a historical retrospect of the centuries during which the colonists established themselves and rose to political supremacy.

History in India during the 17th, 18th and 19th centuries, is made up of a complex tangle of many strands which are difficult to unravel in a short account.

When the earliest European traders came to India Mughal rule was firmly established in North India. Under the two immediate successors of the Emperor Akbar, Jehangir, and Shahjehan, new territories were added in the South. It was to the court of the former, that the first British Ambassador, Sir Thomas Roe journeyed, in search of trading privileges for his countrymen. Though more territories were added to the empire in the reign of Aurangzeb (1658-1707) the apparently monolithic structure began to break up due to the various policies adopted by the Emperor, and the financial ruin resulting from continuous wars and punitive military exercises which he undertook to control his rebellious subjects. For the forces of disintegration never too far below the surface of the imperial edifice began to show up, and great cracks appeared in the grand structure founded by Akbar. The provincial governors or subedars assumed independence in fact, if not in name. With the weakness of the centre all became confusion. New type of leaders were thrown up, men of adventurous spirit who relied on their own capabilities and set up independent kingdoms from the remains of the great empire of the Mughals. Thus it was that men like Alivardi Khan in Bengal, Anwar Din in the Carnatic and Asaf Jah in the Deccan could rise to power. These were nevertheless local leaders evoking no loyalty anywhere else in the country. By the middle of the 18th century, the real

contenders for the imperial mantle were the Marathas. Their control stretched from the boundaries of Mysore in the south, across Central India (Gujarat, Malwa, and the land between the Ganges and the Vindhyas), taking in the West Coast, and as far north as the Punjab. It included the capital, Delhi, where the reigning Mughal Emperor became a puppet in their hands.

The Marathas, in the course of hundred and twenty years had risen from the small independent kingdom carved out by Shivaji (1627-1680) from the territories of the effete Bijapuri dynasty to a powerful military confederacy. Its centre lay at Poona, but it was stretched across a large part of India.

The political power of the Emperor had vanished, but the 'idea' of Empire lingered on. The ideal of "Imperial Unity" persisted, albeit tenuously. This was manifested in the outward respect shown throughout to the puppet descendants of Bahadur Shah by the new usurpers of independent power. The Emperor was still regarded as the legal source of authority. The Marathas as well as the British in the later 18th century thought it politic to clothe the concessions they extorted from him in a raiment of legality through Imperial 'Sanads' and 'firmans'.

The Maratha confederacy became embroiled in internal quarrels after the death of Peshwa Madhav Rao. As in the case of the Empire, so in the case of the Marathas, the central control at Poona became weak and the four subsidiary chiefs began to function as independent rulers, setting up five different centres of activity at Gwalior, Indore, Nagpur, Baroda and Poona.

It was left to these chiefs to deal with the English merchants when they embarked on their determined bid for power. The jealousies and restless ambitions of these men prevented them from fully comprehending the real nature of the threat from the foreigners. Though they occasionally united to fight the British, this unity was not strong enough to withstand the determined onslaught of English diplomacy.

The earliest Europeans to settle in Western India were the Portuguese. They set up their first factory at Cochin, with permission from the local Indian ruler, who was called the Zamorin. Soon however, they decided to back their trade with force and organisation. A Viceroy was sent out, who, with the superior navy overcame the attempts of the Indian ruler to discipline them. They forcibly wrested the right of trading on the Indian Ocean from other merchants, and began to interfere in the internal politics of the Indian states. Soon a number of settlements were created along the West coast, at Goa, Diu, Daman, Salsette, Bassein, Chaul and Bombay. By the middle of the 16th century, they had established their naval supremacy and driven the Muslim traders from the old routes. They ruled an empire extending from Ormuz in the Persian Gulf to Macao in China (*See Panikkar, 1974, pp 35-45*).

By the beginning of the next century, other European nations became interested in the Eastern trade and monopolistic companies were formed in Holland, England and France to exploit this trade. These maritime countries began to challenge the Portuguese monopoly, which was finally broken by force.

The Dutch took over the Portuguese establishment at Cochin, and established others on the Coromandel Coast, and Gujarat and in Bengal. They also had an important factory at Surat.

The English East India Company was formed in 1600 A.D. in England. In 1608, Capt. Hawkins landed in the thriving Mughal port of Surat and travelled to Delhi to try and get an imperial firman which would allow the Company to establish factories in India. The firman was finally received, and the English established their first factory at Surat. Sir Thomas Roe, the first ever ambassador sent by the British king (James I) to the court of an Indian king, was able to gain the right to build a house, and practice their religion and to carry arms, for the English merchants (*Forrest, 1903, pp. 45-48*). The English established factories at Ahmedabad, and Broach and at Rajapur, Karwar and Anjangao on the west coast. Between 1639 and 1690, other factories were set up at Patna, Cossimbazar, Hughli, as well as in Madras, Bombay and Calcutta.

However, the European traders did not yet exercise any political authority. Their trade too had changed its pattern. The demand in Europe for luxury goods superceded the original need for spices. Indian textiles, calico muslin and silks were now pouring into the continent. Panikkar points out that the Asian trade at this time was essentially a one-way traffic because there was no great demand for European goods in the Asian countries yet. Moreover the Indian economic system was not really dependent on trade alone but on agricultural revenues. (*Panikkar, 1974, pp 50-54*). For various reasons then even after 200 years the position of the European traders in India was virtually the same as it had been when the Portuguese first came here. The rivalries of European nations had changed only the economic situation of these traders vis a vis their strength and presence here. Thus the Portuguese were no longer the main European traders and their territories were restricted to Goa, Diu and Daman. The Dutch had also been pushed into the background in India as they concentrated on their far-eastern possessions. The French had minor posts at Karikal, Mahe and larger ones at Pondicherry and Chandernagore. The British were doing the best, and had many posts, the most important of which were Madras, Calcutta and Bombay (*Ibid p, 74*).

In the decade following 1757, a struggle for commercial supremacy broke out between the English and the French in India. This was really a part of a much larger struggle for power raging between the two countries in Europe, at the time. To gain an upper hand over one another, each group began to fish in the murky

waters of the Indian political scene. They began to interfere with the internal quarrels and intrigues of the various Indian states so as to be able to extract both political and commercial concessions for themselves. Though this policy was the brainchild of the Frenchman Dupleix, it was carried to spectacular success by the English. At the end of the decade, the English emerged victorious. The French were practically driven out of India. The East India Company won a diplomatic success, helped by the treachery of the disloyal elements at the court of the Bengal Nawab, at the Battle of Plassey (1757). This allowed them to collect revenues in a small area of Bengal, the 24 Parganas. It also allowed them to set up a new Nawab on the throne from whom they could extort not only cash but also many trading concessions. Also, soon after this the joint forces of three Indian princes were defeated at the Bettle of Buxar (1764) and this proved to be a decisive factor in making the English Company an important element in the politics of India. The Company was granted the Dewani rights i.e. the right to collect revenues) of the rich provinces of Bengal, Bihar and Orissa. Within the next fifty years, the English were able to defeat all their Indian rivals and establish their supremacy here.

Though they had made substantial territorial gains in east India and on the south-eastern coast, their settlements on west coast had not progressed much. They were hemmed in, in the north by the powerful Maratha confederacy, and in the south by the kingdom of Mysore, under Haider Ali and his son Tipu Sultan.

The lengthening shadow of the Marathas hampered also the mercantile activities of Bombay which though strongly fortified, was the smallest of the three, 'Presidencies'. Lack of revenues from a large hinterland impeded the growth of capital and till the end of the 18th century it was regarded almost as a frontier outpost.

By the end of the century, the English had gained a dominant influence over large areas, mainly the east (Bengal, Bihar and Orissa), central north India (Awadh) and in the south (Carnatic and Madras). The states of Hyderabad under the Nizam, Mysore under Tipu and the Marathas covering the west and central India stood in opposition to them. Tipu was diplomatically isolated and his power destroyed, and the Nizam made into a dependent puppet. The main rivals of the English were the Marathas, and they now felt strong enough to challenge them.

Under the last Peshwa, Baji Rao II (1796-1818), there was a rapid deterioration of the organization of the confederacy. These were years of turmoil in the Maratha kingdoms, riven by the rivalry between Sindhia and Holkar. The inificient and vacillating Peshwa became a pawn in the struggle between his powerful feudatories. This forced the Peshwa into the waiting arms of the English at Bombay. Unfortunately for the Marathas, this coincided with the Governor-Generalship of Lord Mornington, the Marquis of Wellesley (1798-1805). An imperialist to the core, his regime saw a forward policy aimed at bringing the whole of India under English domination. Baji Rao II had to sign a Treaty of

Bassein (1802) by which he had to accept the Subsidiary Alliance system. In return English troops put him back on his shaky throne. They also defeated Sindhia and Holkar who were now brought into the Subsidiary system too. Yet, the victory had not been easy, and the war had demonstrated "that British military power, while it had achieved superiority in the field, was yet unable to conquer and hold India. The effort was given up to be renewed twelve years later". (*Panikkar, 1974, p. 81*).

In this brief interlude, the Peshwa could have put his house in order, but the opportunity was not utilised, and though he chafed at the restrictions imposed on him by the 1802 treaty, he could not really rally his jagirdars nor become closer to them. The Peshwa was continuously watched and often bullied and his power was controlled and curbed by the Residents who gathered up more and more real power into their own hands.

The final push was given when the Marquis of Hastings (1813-23) decided to annex outright as much of the country as he could. An excuse was found in the murder of Gangadhar Shastri to open a full-scale war against the Peshwa and his feudatories. The Marathas were totally defeated, the Peshwa's territories were annexed to the Bombay Presidency, and the power of Sindhia was reduced by taking away the Rajput territories and making him more submissive. With the addition of the vast territories of the Peshwa there was an instant improvement in the political and financial status of the Bombay Presidency, and Bombay town became the capital as well as the financial head-quarters of this enlarged territory.

The rest of the 19th century saw the rapid consolidation of British supremacy. Though this supremacy was challenged during the upheaval of 1857, it was able to weather the storm. The East India Company, already a shadow authority, was finally superceded, and direct rule over India by the British crown was formally announced after the suppression of the uprising. This rule continued for ninety-years till India won her independence in 1947. (*Majumdar, et al, 1956, Vol. III; Sardesai, 1948, Vol II and III: Ranade, 1900; Panikkar, 1974; relevant chapters*)).

II B. ECONOMIC AND SOCIAL SETTING

The economic conditions prevailing in the country and the Company's participation in it had a direct influence on the tectonic activities of the Europeans. India herself had a prosperous industry of a pre-capitalist nature, and much export of luxury goods used to take place. This brought an enormous quantity of gold bullion into the country. European traders took part in this and made profits for themselves. However, the economic condition of the Company and its merchants was still in a precarious state uptill the Battle of Plassey (1757). The English merchants were subject to the laws of the country, and were often harassed by the Indian rulers and their officials.

After 1757, the whole situation began to change. Political power gave the Company the means to change the customs and excise laws of the land for their own benefit. In the years after Plassey, enormous wealth was drained out of the country, and the Company servants trading privately amassed huge fortunes, at the cost of the parent company.

As the century progressed, the Industrial Revolution transformed the production techniques of English industries. This enabled English manufacturers to undersell Indian products. The monopoly of the Company together with the artificial restrictions on imports into England ruined the handicraft industries, thus converting the Indian economy into a colonial one. She became an exporter of raw materials and an importer of manufactured goods, while the whole inland trade was also almost taken over by the Europeans (*Edwardes, 1961, p. 225*).

These merchants who were the servants of the Company made use of the licences for their private trade, amassed their fortunes and took them back to England. However, when private trade was prohibited, many of them resigned from their jobs and set up their own business houses. When in 1813, the Company's monopoly was abolished by an Act of Parliamant, other British traders came out and opened up agency houses. These houses combined a variety of operations, like ship-owning, insurances and banking. Now the non-trading Europeans and serving Company officials came to control huge capital resources, as well as most of the internal and coastal trade in the country. (*Rungta, 1970, p. 6*). This economic pattern was true of the west coast of India as that of other areas of the country.

The end of the century saw the emergence of large agency houses on the west coast too. These were mainly owned by Europeans, but some had partnerships with Indians.

These agency houses required the help of Indians to maintain their establishments as brokers, writers, linguists, peons, etc. Apart from these types of employees, they also needed Indian merchants for the disposal of imported goods, and to buy goods for export in local markets. Indian merchants took care of deliveries by advancing money to weavers and by other means of maintaining supply. Ships were required by both the Company and the country-traders. These began to be built in greater numbers after 1735, when Lowji Nusserwanji Wadia migrated to Bombay. Soon, the family became the best ship-builders on the west coast. (*Masselos, 1974, pp. 12-13*). The Company itself sometimes relied on the capital of Indian merchants for some of its conquests, for instance, a Nagar Brahman from Surat, Trawadi Arjanji Nathji, financed the Bharatpur and Nepal campaigns of 1804 and 1813 respectively (*Masselos, 1974, pp. 12-13*).

Amongst the Indians involved with the British trade on the west coast were many caste and community groups, Armenians, Banias, Parsis, Jews, Bohras,

Khojas and Marathi Brahmins from Surat. The expansion of private trade began to raise Bombay out of the insignificant position it had hitherto occupied in relation to Surat. The latter was the great port of the west coast, not Bombay. However, due to various complex causes Surat began to suffer in the 18th century. Merchants began to move to the comparative safety of Bombay island where the British navy had established some protection for private shipping. (*Nightingale, 1970, p. 17; For a new look at the problem, see "Indian Merchants and the Decline of Surat" by Ashin Dasgupta, 1979, Wiesbader*).

In 1728, a Mayor's Court was created to enforce commercial law, while a bank had already been set up some years earlier. This made Bombay attractive to the merchants who began to hesitantly come forward to settle on the island.

However, throughout the 18th century, Bombay remained, economically the weakest of the English centres, and in fact also the unhealthiest and 'most despised' (*Spear, 1932, p. 66*). The state of affairs did not really change for sometime. Territorial conquests which had made the other two presidencies powerful and rich, could not be effected easily on the west coast. The trade of Bombay too, could not really get off the ground, and it had a huge debt to the Bengal Presidency even upto 1786. Its public credit vanished and "every department was deeply in arrears". The financial plight of the Bombay merchants is vividly described in the memoirs of James Forbes. (*Nightingale, 1970, pp. 14-15*). This caused so much anxiety that both Cornwallis and Wellesley thought of abolishing the Presidency and adding its territories to those of Madras.

However, during the 1780's a number of trading firms owned by Europeans had overcome the difficulties and accumulated large capital. These later played a vital role in the expansion of English power in west India. This trend developed further through the opening up of the Chinese market to the raw cotton of the Deccan. For this, larger and better ships were required, and Parsi capital made it possible. Emigrating to Bombay in even larger numbers, they found sources to invest their capital, often in partnership with the British (*Nightingale, 1970, pp. 21-22*).

When the Maratha Confederacy began to break up finally at the turn of the century, Surat was annexed to Bombay. Charles Malet, an outstanding official of the Company, formed the grand imperialist policy of 'shackling' Gujarat to improve the financial condition of the Bombay area. Within a short time, this imperialist venture was completed, and a large hinterland, somewhat inconvenient as it turned out later, was added so that enough revenue was generated to cover ordinary expenditure for a while. (*Ibid, p. 217*).

Gujarat however was not particularly suitable and though the town continued to grow, it lagged behind the other mercantile centres of the English in India. It was not till the last Anglo-Maratha war in 1818, that far-reaching changes came

about in the economy of Bombay. The annexation of the Peshwa's territories created a contiguous and convenient hinterland and Bombay's commercial expansion became rapid.

Construction and repair of roads, the opening of Bhor Ghat (1830)—the first major road through the ghats, and general improvement in transport and communication stimulated this growing trade (*Rungta, 1970, p. 14*).

We should remember that this was approximately the time when the economy of the rest of India was changing to the colonial pattern. Many old manufacturing towns and ports were ruined as the export of finished goods dwindled. Surat suffered with the rest. Never having been a manufacturing centre, Bombay escaped the ill-effects of the new pattern of trade. In fact, she gained in stature as large amounts of raw materials, cotton, opium, sugar, and other goods passed inward or outward through her port. This naturally brought added revenue and concentration of wealth in the hands of the private merchants and their agency houses.

As the new agency houses became wealthy, they began to acquire political power, both in the Bombay government, and in London. Their owners were not only able to finance the Bombay government in many of its projects, but after retirement to England, managed to derive considerable leverage from their wealth, in the direction of Company policy. This was specially so in Bombay where the officials were allowed to trade privately till 1806. Men like Fawcett and Bruce and David Scott held high offices while also amassing wealth as private traders. (*Nightingale, 1970, pp. 25-26*).

Side by side, with the creation of the princely European merchant families, the enormous private fortunes of Indian merchants were also created. Parsis, Gujarati Hindus (Khapole Banias, Bhatias etc.) Gujarati Muslims, Sulaimani Bohras, Konkani Muslims—all profitted from trade in the 19th century. According to one traveller, by 1825, the Parsis were the foremost in trading. They were also partners in almost all commercial houses, owned joint-stock banks, and also took part in new ventures like railways and cotton mills. (*Masselos, 1974, p. 15*).

Thus, due to special circumstances, the English received, the help of the economically powerful Indian groups. "In plain truth, Parsi, Muslim and Hindu interests interacted in such a way that the English went from strength to strength." (*Furber, 1965, p. 70*).

Amongst the Parsi families who established an aristocracy of wealth were the Jeejeebhoys, Banajis, Dadiseths, Readymoneys, Wadias and Camas.

Amongst other communities were the Khapole Bania families of Veerjivundas Madhavdas Goculdas Tejpal, and Morarji Goculdas. Jaganath Shankar-

seth, a Marathi Brahmin established himself as a wealthy man, while the Bohra family of Tyabji, and Konkani Muslim families of Tungekars and Roghays became traders and shipowners. These Sethia families had close dealings with English traders, and this contact led to the adoption of western customs and ways of life. These men having made their fortunes in Bombay, were willing to spend generously for its improvement and beautification.

The uprising of 1857, somehow by-passed Bombay and left her undisturbed to welcome the great changes that were now to take place with the advent of industrial technology. The first cotton mill was set up in 1857, and others soon followed. Modern financial management was manifested by the establishment of more joint stock banks ;—apart from the Bank of Bombay promoted by John Skinner and Dadabhoy Pestonji, set up in the 1840's, we now had the Chartered, the Oriental and the Commercial in quick succession, promoted mostly by Indians.

Industrial technology revolutionised transport and communication. The P & O Company began its monthly mail service between Bombay and Aden in 1855. This made communication with England much quicker. The Greater India Peninsular Railway Company laid its first 20 miles of track between Bombay and Thana (*Edwardes, 1902, p. 264*). The Bombay, Baroda and Central Indian Railway Company laid its first to Baroda and Ahmedabad. Gradually Bombay became the central point of a network linking it to all parts of the hinterland. The opening of Suez Canal in 1869 made transportation of goods to Europe much faster. Next year the submarine cable was laid from Suez to Bombay connecting up with England through Gibralter, and linking both the countries by telegraph.

When the American Civil War broke out, cotton exports from that country to England stopped. Indian traders benefited, and export of cotton from Nagpur, Berar, Gujarat and the south Maratha country rose sharply. A 'boom' in the share market resulted in large-scale profits to private merchants. But this was a transitory phase, because at the end of the Civil War, when American cotton exports were resumed, the share market crashed. (*Choksey, 1945, pp 220-230*). The city of Bombay and its trading circles were however able to absorb the losses. No great damage was done to its economy. Some private fortunes were wiped out of course, including that of Premchand Roychand, and some firms and banks failed. This list included the Nicoll & Co., and the Overend Gurney Bank. Many were temporarily stalled and were able to recover fully, including Goculdas Tejpal. Some had not been affected much, like the Sassoons.

Whereas the Shetia families looked upon Bombay as their home and lavished their money on the city's improvement, the English took away most of their wealth at the end of their profitable careers. Some portions of it they spent in the city on lavish living and display of prestige, and not the least in the

construction of large residences, or place-like homes for themselves. They could now aspire to live in a style which they had not been able to adopt in their own country.

In England of the 18th century, the 'gentlemen' were the upper classes, and the great landed aristocracy, whose wealth lay in immense quantities of land. They amassed huge estates and were proud of their 'rural palaces'. Some of them were perhaps richer than smaller royal houses of Europe. Their wealth was ostentatiously displayed in palaces like Castle Howard, Wentworth and Kedleston, "which intoxicated contemporaries with their size and grandeur. To give them a fit setting, nature was subdued with exquisite art, and the English countryside enriched eternally by men so confident of themselves that they designed for their children's children" (*Plumb, 1976, p. 19*).

In London, however, power was in the 'hands of the merchant princes, who dominated foreign trade and consequently had great influence in politics. They were directors of the great chartered companies like East India, South Seas, Levant etc. They also, were often directors of the Bank of England, and thus closely linked with financial ties with the government. They may not have had the social status of the landed aristocracy, but their life-style was certainly similar. They built as grandly as their social superiors, and bought up huge estates to gain the social prestige which they thought was their right. (*Plumb, 1976, pp. 17-25*).

At first the East India Company took pains to exclude the appointment of "gentlemen", fearing that "minds unused to the ways of trade might indulge in extravagances unsuited to honest merchants". They had even passed a resolution that they "should be allowed to sort their own business with men of their own quality" (*Edwardes 1961, p. 195*). Though later, some of the younger sons of the aristocracy, or problem children of the same class came out here to make their fortunes, by and large, the merchants were not of the upper classes. The palaces built by these men in India were motivated by the desire to emulate their socially superior aristocracy at home. (*Edwardes, 1967, p. 45*).

However, the early merchant princes also adopted in their lifestyle some Indian customs. This is easily explained by the long and close contact between them in Surat and Bombay. As already explained, the close business dealings and the necessity of getting along with Indians in day to day business, engendered a mutual social acceptance.

The absence of European women led to liaisons with Indian women who had an orientalizing influence. Foreigners took up habits like smoking the hookah, and drinking arrack, the Indian wine. They took part in Indian festivals and were entertained by the 'nautch'! Though both communities were often critical of each other, there was a certain degree of respect. Not sure of their

position, or the permanence of their trade, they took care not to arouse opposition by thoughtless action. Respect for certain aspects of Indian culture was also present, as is evident from the many Englishmen who took care to learn Persian and other Indian languages. There was also some amount of social intercourse between the Europeans and the Muslim aristocracy.

The Europeans must have admired the extant architecture of the Deccan in the early stages. They were not averse to borrowing from the Bijapur style in building the tombs of their Presidents at Surat. They also hired Indian houses for their factories because obviously these were suited their activities.

The cosmopolitan traditions of Surat were carried over into the settlement of Bombay. By the 19th century, the tradition of co-operation had become well-established due to economic interests, and remained so, for much of the century. One can nevertheless read too much into this so called sociability. The inter-mingling was restricted mainly to business dealings and day-to-day mixing at a personal or social level after working hours was kept at a minimum. In spite of this, the relations between the two groups remained on pleasant terms at least in business dealings for a longer time than in the other Presidency towns.

The first to be attracted to the new living styles and to awaken to the possibilities offered by collaboration were the Parsis. They took to westernization first and availed themselves of the new educational possibilities. They also became a very wealthy community, and according to Lord Valentia, owned almost the whole of Bombay. (*Valentia. 1811, p. 173*). This westernization of course, spread quite soon to other communities living in Bombay, and led to the adoption of westen artistic fashions, and tastes in the construction of their homes. Many wealthy Indians built houses incorporating the imported western styles, the classical 'orders' and the 'Gothic arches'. Mrs. Postans and Mrs. Grahams, visitors to Bombay in the 19th century have also testified to the unusually friendly relations between the Indians and Englishmen. This was in marked contrast to the rest of India, where, towards the end of the 18th century a deterioration of relations between the two communities had set in.

This deterioration was first manifested in the political and administrative spheres, and began in the rest of India with the coming of Cornwallis in 1786. His policy of exclusion of Indians from higher posts and other forms of discrimination was continued by Wellesley (1798).

Wellesley's imperial vision was backed by pride and a sense of racial arrogance (*Edwardes, 1967, p. 32*). This found expression, not only in expansion of territory, but in a show of pomp and splendour, as exemplified in his neo-classical Government House in Calcutta.

Growing political domination, together with various other factors, led to a "turning away" from Indian influences. Englishmen, began to regard Indian

customs as barbarous, and were filled with a sense of racial superiority. The rise of Utilitarian philosophy and the strong sense of Benthamite paternalism made it almost a moral duty to impart European moral and cultural values to Indians through education and example. (*Edwardes 1976, pp. 32-34; Nilsson, 1968, p. 62; Mrs. Postans, 1839, p. 45, talks of 'civilizing the native gentry by English education which would also 'christianize' them.*)

This attitude was also reflected in the British views on Indian art and architecture. English intellectuals of the calibre of James Mill, judged all art and architecture according to the ideas of Greek models and classical traditions. In this evaluation, was also included Renaissance painting, and the neo-classical revival. By these standards, Indian art was found wanting in aesthetic merit and Indian society was found to be primitive. This seems to have been the fashionable attitude in Europe during the late 18th century, when all civilizations were put to the test of comparison with classical Greece and Rome and found wanting. (*Bearce, 1961, pp. 71-74.*)

These new attitudes, directly changed the living styles of the English in India. Their ways of life, were now consciously more Anglicised. This included their taste in architecture too.

The conscious adoption of the styles of architecture prevalent in contemporary Europe led to the creation of replicas of European prototypes. The motivating force was the admiration of the traditions of Greece and Rome. It was reinforced by the new attitude of superiority and national pride. The desire of the merchants to impress Indians, was supported by their wish to convince themselves and their contemporaries of their wealth and importance, by the use of the architectural devices of the aristocracy in England. (*Edwardes, 1967, pp. 45-46*).

It has been pointed out, that the neo-classical style which was imported, often lost sight of its original functional ideas, as laid down by the traditions of Vitruvius. It was considered sufficient if it related generally to the cultural heritage of Greece and Rome, and by its large dimensions and magnificence, impressed the natives. (*Nilsson, 1968, p. 162*).

This would ensure also that they did not become 'Indianized'. Having advanced from his position of mere trader the Englishmen now became ruler, and master, and as such had to emphasize his distinct identity. He not only had to remain 'un-Indian', but also had to emphasize his 'Europeanness'. This was most convincingly and conspicuously done through architecture. The bodily importation of European architecture emphasized the separate identity of the rulers who made sure that they were not absorbed into India, like her earlier invaders.

Other Europeans, besides the English had made use of architectural froms keeping in mind the political considerations. Dupleix and the Dane, Ole Bie had tried to impress the neighbouring Indian states, by building monumental structures. Wellesley then went a step further and built a grand palace which created awe amongst Asians and Westerners. (*Nilsson, 1968 p. 163*). (Similar correlations are to be found in America, where towards the end of the 17th century, when British occupation of the North Eastern States was securely established, a formal and ambitious architecture was introduced from England. Most prominent example of this is Williamsburg (1691) the new capital of Virginia. Before this, colonists had not erected permanent buildings on a large scale). The statement of Lord Valentia, made in support of Wellesley's Government House project, remains the classic interpretation of the use of architectural vocabulary as an aid to social and political domination . . . "they ought to remember that India is a country of splendour, of extravagance, and of outward appearances. The Head of a mighty Empire ought to conform himself to the prejudices of the country he rules over; and that the British in particular, ought to emulate the splendid work of the Princes of the House of Timour, ... In short, I wish India to be ruled from a palace, not from the counting house, with the ideas of a Prince, not with those of a retail dealer in muslins and indigo". (*Valentia, 1811, Vol. I, p. 235*).

In saying all this about the changed views of Englishman, one must bear in mind of course, the fact, that there were exceptions to the rule. There were a number of men, including Munro and Mountstuart Elphinstone, who were distressed by the contempt in which Indian culture and society were now held by their contemporaries. (*Bearce, 1961, p. 149*). But the views and actions of this minority, though important individually, did not affect the general trend. It was in the time of Elphinstone himself, that Bombay acquired the neo-classical Town Hall and Mint and the buildings around the Green, concentrating the wealth and power of the European community in an impressive frontage.

Within these overall social, cultural and political trends, the case of Bombay presents a slightly different picture. Here, as we have already seen, the relations between the Indians and Europeans remained friendlier for a longer time than in other places. Upto 1838, one visitor notices that "Indian gentlemen formed a recognized and important part of the community, and that their sons "are educated to fit them for any mercantile or political appointment" . . . . (*Mrs. Postans, 1839, pp. 3-4*). There was also, as yet, no structural separation of Indian and European towns, and Indian merchants built their homes near the Castle. There was, however, a broad ethnic division, as Indians of all denominations tended to congregate towards one area, while the Europeans built more spacious houses in a scattered pattern to the south of the Castle. Though talk of removing the Indian houses beyond the town walls had been going on for some time, the idea was not put into effect till the early 19th century and even then, the reason given for changes in plan was 'dangerous overcrowding' creating fire-hazards.

How this separation came about, has been discussed later. The wealthy Indian merchants, however, later moved to healthier spots outside, at about the same time as Europeans did so.

We must note however, that by mid-19th century, English society itself underwent profound changes. The scientific and technological inventions of the Industrial Revolution had led to the development of an industrial economy concentrated in great urban centres. These cities, began to sprawl over the surrounding areas, because new improvements in transport reduced distances with amazing speed. Railways and macademised roads, could bring men to the heart of the city at a much faster speed. Residential areas began to be pushed out of the inner city and led to the growth of suburbs. Old boundaries of towns, marked by the medieval wells were beginning to be eliminated.

The same factors also revolutionized the social and political structure of England. The rural-based farmer was giving way to the urban based industrial proletariat. Together with this a substantial middle class grew to power and wealth, though they remained at a distance from the aristocracy. They began to demand their due share of amenities and luxuries made possible by the new technical innovations. Their expectations developed according to the living standards of the aristocrats or landed gentry whose opulent town-houses roused the envy of the middle classes. Since it was mainly from these middle-classes that the civil servants and military officers for India were drawn, it is to be expected that similar social attitudes would be brought with them to their new homes in India. (*King, 1977, pp. 128-129*).

Another significant change during this period in England, was the sharp division between work and leisure. Industrialisation and urbanisation led to specific periods set a side for recreation or leisure activity. The long week-end, vacation, evening entertainment and other leisure periods required new structural forms, like hotels, theatres, cinema houses, and above all, the "holiday resort". It was at this time, that seaside resorts like Margate, Scarborough, Brighton etc., were developed. These resorts may be classified as suburban patterns, offering recreational, health and social benefits. (*Ibid, p. 161*). The middle classes took to these resorts and developed a kind of 'dual residence', spending their working days in a permanent residence, specially during winter in the city, and their leisure at a temporary residence in the holiday resort. (*Ibid, p. 162*).

The Civil servants and military officers who came out to India in the 19th century, taking their cue from this fashionable practice back 'at home', established a similar suburban pattern in the 'hill-stations' which dot the map of India in every state where hills are to be found. (The most conspicuous example is of course, Simla, where the entire government offices were transferred during the summer, to escape from the heat of the plains). The three presidency towns even developed satellite recreation suburbs or hill stations-Calcutta-Darjeeling, Simla; Madras-Ooty; Bombay-Mahableshwar-Poona.

There was also a process of democratisation towards the second half of the 19th century, when parliamentary reforms changed British politics. This was also reflected in English society. But these profound social changes were not generally felt in the small colonial community in India. Here, the colonists, being the ruling class had to keep up a 'feudal image' and carry on emphasizing their distinct identity. They had to develop a unique society and an imperial ideology for their own survival, and as a way of creating new norms in administrative behaviour; even art and architecture was used for the task at hand.

In the 19th Century, the colonial group in India itself was a sharply stratified one. At the top strata were the senior-most members of the Civil Service, the judiciary and the military. These formed the 'governing elite'. As pointed out by King, membership within the colonial society was mainly due to the rank held, as also to their social origin. (*King, 1977, p. 60*). The Governor-Generals or Viceroys, and the Governors of the Presidencies were usually from the British peerage, even though in England, the highest executive post (that of Prime Minister) could be held by a commoner. The second strata was comprised of the members of government services—civil, medical, police etc., as well as the commissioned officers of the military establishment.

Next in rank were all other Europeans, who had similar socio-economic or educational origins but who were not gazetted officers. This group included the private businessmen and others engaged in commerce for whom the term 'box-wallah' had been coined by the 'Anglo-Indian' community.

The lowest strata was made up of non-officer classes, including non-commissioned soldiers in the army, clerks, teachers, engineers, technicians and small shop-keepers.

Both the gazetted officer class and the 'box-wallah' class were mainly taken from the upper middle and middle classes in England. They adopted the life styles of the upper middle classes when they came to India (*King, 1977, p. 61*).

Living styles of these groups differed only slightly but their attitudes and behaviour patterns naturally affected their tectonic activities. They built spatial forms like suburbs, towns, metropolis and hill stations, as well as residential structures, totally alien to the types found in the host culture and thus created a special socio-cultural environment for themselves.

II C. ANTECEDENTS

The colonists brought to India their own cultural ideas, social differentiations, and their own value judgements regarding their artistic traditions. It will not be out of place to discuss here, the traditions that they idealized, in the realm

of architecture, and which they felt compelled to import into a new land. A land which was in every way, climatically, geographically, socially, and culturally so different from their own little island on the Atlantic sea.

Europe had a continuously developing form of architecture from the very earliest times of its history. The Greeks developed a trabeate form, which preserved many of the techniques and forms of wooden construction, which they incorporated as decorative elements in their stone temples and public buildings. Though the trabeated form is technically more primitive than the arcuated one developed by the Romans, the Greeks attained such a level of aesthetic excellence that their style became the tradition for later European civilizations,—a tradition which has survived for over 2,500 years and served as an inspiration for men of many ages. They developed specific rules of proportion and form, and reached heights of technical efficiency, and were able to make use of Entasis to correct optical illusions. They also made use of sculpture and were able to balance the relationship between sculpture and architecture. The best example of Greek architecture is the Doric temple form, most outstanding of which is the Parthenon (447-438 B.C.) which is still looked upon as the most perfect building ever built by Europeans. The Greeks also developed different types of columns, which together with the entablature is generally known as the 'orders'.

The Romans took over the basic ideas of Greek architecture, but made technical innovations, in developing an arcuate style. They were able to successfully build great domes and vaults which are masterpieces of engineering skill. The development of concrete, used together with brick, made possible, this form of architecture. Concrete and rubble could be used to create plastic forms, which could then be clothed in marble or stucco. The Romans did not do away with the Greek columns, in fact they added more varieties, but the column was no longer needed as a structural necessity. The arch and vault could cover larger areas of space in a more economical manner. The columns were therefore, degraded and used mainly for ornamental purposes, while walls became the more important element. The columns were often attached to the walls as decorative features.

The Romans developed the Basilica as a typical form. In it, the columns were inside, the walls, and in effect it was like a Greek temple turned inside out. The Pantheon is the apogee of Roman architecture, an engineering feat and an artistic masterpiece. They also built many secular buildings, required for administration and recreation-Thermae, Amphitheatres, Triumphal arches, forums etc. Romans too developed a form of domestic architecture for the town people and the richer nobles. The Roman villa or country-house, the domus or town house for the rich classes, and the unsula or storeyed apartments for towns folks, showed great mastery in planning.

The arcuated style reached its greatest technical perfection in the full-blown Gothic style which spread across Europe in the medieval age. It was a highly developed system of pointed arches, rib vaults, flying buttresses, and clearstory windows. It reduced the long arcades, the weight of the arches being dispersed by a complex system of buttresses.

In this way, the tallest of structures could be built, but instead of domes, spires, pinnacles and flying buttresses enlivened the skyline. Sculptural ornamentation was used with great freedom, and fantastic shapes of animals, flowers and leaves were stylised. The Gothic style had spread all over Europe, but in each country it developed characteristics of its own. In England, it was seen at its earliest in the 12th century but continued to evolve till the 15th century. The English Gothic style laid less emphasis on height, but developed intricate and beautiful star, fan and lierne vaults. Window decoration was also intricate and beautiful. Medieval English craftsmen became masters of stone carving, and created the most beautiful sculptures. Medieval castles were also built in the Gothic style, and their great fortifications showed the engineering skill of the medieval stone masons.

The Gothic style began to be superceded in the 15th century by a new one. The motivation for the new style lay in the intellectual movement of the Renaissance. This movement resulted in a revival of interest of the European scholars in the classical cultures of Greece and Rome. It had a profound effect on architectural styles throughout Europe, though the movement began first in Italy. Here it was patronized by the rulers and rich aristocracy of the city states. The interest taken in the classical forms by merchants, townsmen and nobles led to the erection of great buildings of a secular character. The Italian architects took motifs from ancient Rome and gave them a new interpretation. They experimented brilliantly with plans, domes and vaults, and with fresco decoration of walls and ceilings. They built villas for nobles, and beautiful churches. The Great Masters of Italian Renaissance—Brunelleshi, Alberti, Bramante, Raphael, Palladio and Michaelangelo gave their buildings the stamp of individuality and personality, while at the same time they grappled seriously with problems of proportion, composition and movement of space inside a building.

The Renaissance style came to England in the middle of the 16th century, and developed a vocabulary of its own. During the Elizabethan times, the English Renaissance combined elements of many styles, such as the symmetrical facades of Italy, decorative motifs from the Netherlands, large windows from the local perpendicular Gothic style. (*Fleming, et. al. 1978, p. 91*).

Later Inigo Jones (1573-1652) developed a mature Renaissance style with inspiration from Palladio, but with English characteristics. His style was to create sturdy, solid and practical structures without undue ornamentation. The

Palladian style made popular by Jones, continued to hold in England for quite some time.

Meanwhile, in Europe the Renaissance style had developed into Mannerism by the 16th century, and then into Baroque. The Baroque was predominant during the 17th century and early part of the 18th century. It is discernible by its profuse decoration, curving forms, massive scale and complex space compositions.

In England, the spiral and curved forms of Baroque were never very popular. Elizabethan England had developed a distinctive domestic architecture with rich and decorative use of timber frames, and plaster. Though Inigo Jones had created a classical style based on the lines laid down by Palladio, classicism really became the most accepted form during the life time of Sir Christopher Wren (1632-1723). After the Great Fire of London (1666) Wren was in charge of most of the rebuilding. Fifty-one city churches, and secular building ranging from barracks, hospitals, libraries to palaces, and even town houses of the landed aristocrats are credited to him. His masterpiece was of course, St. Paul's Cathedral—a beautiful blending of classicism and Baroque.

Throughout the 18th century the Palladian style, and its various modifications as adapted by individual architects, retained its hold over England. Palladian buildings of the 18th century also include the palatial country residences of the English aristocracy mentioned earlier such as Blenheim, Castle Howard, Holkham, Kedleston and Chatsworth.

Later on in the 18th century, the revival of historical science and a new interest in classical architectural form led to a renewal of the old inspiration. In 1762, Stuart and Revett published the "Antiquities of Athens", which generated keen interest amongst practising architects. Eminent designers began to travel extensively in Greece to rediscover the beauty and simplicity of the ancient forms. These were now interpreted in the light of functionalism which became almost a synonym for rationalism. The foremost theorists of the day, urged the reduction of useless ornamentation and the need to return to structural simplicity. The most widely influential of these was Jeen Nicholas Louis Durand, the French structural theorist. He advocated a rationalist ideal in building to serve an utilitarian purpose. "One should not strive to make a building pleasing, since if one concerns oneself solely with the fulfilment of practical requirements, it is impossible that it should not be pleasing", he wrote in his "Precis et lecons d'architecture". (*Fleming, et. al. 1978, p. 81*).

In the neo-Greek revival, European architects rediscovered the deep roots of their traditions, and men like Cockerell. Inwood, Wilkins, etc., began to design in a formal Greek style. It must be noted however, that neo-classicists revived the ancient forms but often departed from Vitruvian interpretations of the characters

of the column orders and other features. (*Nilsson, 1968, p. 161*). The neo-Greek movement reached its climax in all countries in Europe in the 1830's. Buildings such as the United Services Club by Smirke, and the gigantic south front of the British Museum were the best examples of the style.

With the commencement of the reign of Queen Victoria, the architecture of England passed through a succession of revivals. Indeed, the age is known as that of historicity, in which the deep respect for architectural historicism became almost a creed.

The Greek revival was played out by 1840, and the Gothic revival became the fashion of the day. It had begun as early as 1760, with the designing of Strawberry Hill, the house of Horace Walpole. The origin of the movement was in romantic literature. In the early stages it manifested itself in the sham ruins put up to beautify the parks and gardens of English landlords so as to add a romantic touch to them. However, in the early 19th century, Gothic came to be recognized again as a serious style of building. Greater archaeological knowledge and prevalence of the cult of romanticism soon made the style fashionable. The popularity was achieved mainly through the efforts of architects like Pugin, the critic Ruskin, and the Combridge Camden Society. The style begun as a picturesque and romantic one, turned from these superficial objectives and became more 'ethical' around 1830, mainly through the efforts of these men.

A.W.N. Pugin was the architect most responsible for changing the nature of the revival. He gave it principles, as strict and comprehensive as those on which classical construction was based. His followers came to regard Gothic almost as a religion. By a stream of books on Gothic design, by a prodigious output in actual architectural works, and by his tremendous energy, he made the style predominant in England. The revival lasted almost to the end of the last quarter of the century. After 1875, however, it began to be replaced by other revival forms.

The Neo-Gothic revival contributed, after 1818, to a vast number of new churches in England and was the accepted style of ecclesiastical architecture down to the 20th century. For secular buildings, the original reluctance was overcome when in 1834, Barry built the Houses of Parliament in the Gothic style, but with a regular and symmetrical plan. This was a landmark for the revival.

Sir Gilbert Scott, (who later designed the library and Senate Hall of Bombay University) one of the most prominent architects of the neo-Gothic style, was greatly influenced by Pugin, and was largely responsible for converting English tastes to secular Gothic. He advocated its adoption because he felt that it was structurally the most honest style, and because of its adaptability and its closeness to nature in its decorative details. From his point of view, it was the

most near to English tradition, and therefore an acceptable national style. He considered the early English form as the best of all variations of Gothic, and chose it for his designs of St. Pancras Hotel, London. However, he also pointed out that the style should be used freely, so that it eventually becomes a new style—and that pointed arches, high pitched roofs and mullioned windows may be dropped if thought to be inconvenient, without sacrificing the true character of Gothic.

The architects of the Victorian age were confronted with new problems which they attempted to solve in their own way. Earlier architects had to provide structures for a limited variety of use. As industrialization progressed during the 19th century, and the organisation of the entire society underwent a change, architects were called upon to meet new challenges in the form of buildings required to perform a variety of new functions. Public buildings, law courts, schools, science laboratories, museums, public libraries, hotels, railway stations, shops, offices and factories, all awaited the imagination and skill of the architect.

New building materials had also been developed which were sure to change techniques of construction. Iron, glass and Portland cement were the great developments of the age.

The Victorian architect was at first reluctant to use the new materials, except for specific purposes like exhibition buildings, train sheds and warehouses. Paxton's famous Crystal Palace was the best example of such constructions. The use of these new materials required functional forms, simplicity and exclusion of decoration. This did not seem to appeal to most architects of the age. When iron was used in construction of train sheds and factories, it was hidden behind Gothic or Renaissance facades. Even Gilbert Scott, who advocated structural honesty, and wrote in 1858 that "metallic construction is the great development of our age", could not allow himself to break away from tradition in actual practice. He built the St. Pancras Station Hotel, in the Gothic style, to hide the great train shed—an engineering feat by Barlow. (*Pevsner; Victorian Prolegomena'; Victorian Architecture; 1963, pp. 27-29*). Iron and glass remained the domain of the engineer, while stone and brick were the materials of the architect. Thus there seems to have been a split between the engineer and the architect. The former built structures like bridges and the latter, buildings. (However, in India, military engineers made all types of buildings, as well as bridges and fortifications well into the 19th century). According to critics, Victorian neo-Gothic architecture is distinguished by a variety of features. The most striking of these is superficiality of structure. There was a tendency to concentrate on facades, without changing plans. These remained mostly axial—that is, faithful to the classical ideals of the Renaissance. Division of space within a building was masked by the facade which corresponded to the prevalent Gothic fashion. This was quite different from real Gothic, in which flexibility with regard to demands of convenience, and structural necessity made

the plans irregular and asymmetrical. So, the 'facade architecture' of the Renaissance was not really changed, only these became ornamented with Gothic detail. Sometimes an attempt was made to impose a superficial irregularity which could be taken for picturesque. In spite of the efforts of Pugin, Victorian Gothic remained a 'facade style' and could not generally be analysed in terms of originality of plan.

In the realm of domestic architecture, the new requirements of the 19th century demanded logical use of the limited space available in the growing urban centres. The newly prosperous middle-class wanted the best of the modern amenities and comforts now available; showy exteriors were shunned in exchange for convenience and comfort and a demand grew for utmost use of space within the structure of the town house. Therefore, urban domestic architecture underwent important changes.

Amongst the men who evolved the new designs for domestic use, the earliest is William Butterfield. In his small group of buildings, he developed a vernacular style, devoid of Gothic trimmings, and relying on grouping of chimneys. He returned to an unpretentious style of house building with plain brick and sash windows. (*Thomson; 'William Butterfield'; Victorian Architecture, 1963, pp. 165-175*).

This trend was continued and developed by G.E. Street and his disciples Phillip Webb and William Morris. To this list was added, towards the end of the century, Norman Shaw and C.F.A. Voysey. These men developed new designs for villas and mansions for the upper and middle classes. They were able, in their smaller houses to shake off the paralysis of stylism. Their desings were distinguished by their unbroken surfaces, peaceful roof lines and skillfully localised points of emphasis. They also solved satisfactorily the needs of convenience, privacy and comfort required by the owners. (*Goodhart—Rendell, 'Victorian Home', Victorian Architecture, 1963, p. 80*). One such example is the "Red House", Bexley Health, Kent. It is a revolutionary design, and an outstanding contribution to domestic planning by Phillip Webb. Webb also built country houses of originality, combined with convenience. The house called "Clouds" was the best known of these. (*Brandon-Jones, "Phillip Webb" in V.A. 1963, pp. 251-259*). Though the leading architects had much in common they produced domestic architecture of great individuality. They showed that planning could be adapted to the needs of the time without sacrificing beauty structural honesty.

This short account of the history of English architecture will not be complete without mentioning one personage who had a profound influence on practising architects of his day, though he himself was not one. This was William Morris (1834-96) whose efforts to do away with the ugliness of towns and "modern" design launched what is known as the "Arts and Crafts Movement". Briefly, Morris and his followers advocated a return to medieval idealism as well

as a socialistic theory to improve the towns, buildings, design of products and the life of the comman man. They wanted to bring back the old joy of creativity where the craftsman could take pride in his handicraft. "They believed that all art should be by the people, for the people". (*Fleming, et. al 1978, p.197*). His own designs and his lectures influenced a whole set of younger architects, scholars and artists and was to set a new trend not only in England, but also amongst influential people in India.

The colonists thus had a long tradition of architecture behind them. It remains to be seen what contributions they made to it, or what sustenance they drew from it and how far they were able to create a synthesis with the tectonic heritage of the host country in which they lived and worked for 200 years (*Clarke, 1974; Nellist, 1967; Ferriday (ed), 1963; —relevant chapters*).

II D. INDIAN TRADITIONS

The colonists did not settle in a country without an architectural background. Ancient building traditions prevailed here from time immemorial. The ancient Hindu civilization had given rise to great periods of architectural activity, and the country was dotted with temples built mainly between the 8th and 10th centuries A.D., considered as the Golden Age of temple building in India. With the advent of Muslims, a new building order was added from the 12th century onwards. Passing through different phases of synthetic development, a style evolved, which historians have called 'Indo-Islamic' (*Brown, 1942, p. 1*). It was the specific style and type of architecture produced by the Muslims in India and its extant remains confronted the colonists when they first settled here.

The first manifestations of this style were seen in Delhi and its surrounding areas, as this was the seat of the administration of the early Islamic kings. The style they evolved has been categorized as the Imperial Style, and flourished for over three hundred years. Even after this, when the Mughal Empire was established with its capital also at Delhi, the style developed by them can be considered the 'final manifestation' of the Islamic Imperial style. The Moghul style took a concrete form in the second half of the 16th century (Akbar) and reached its full glory in the 17th century under Shah Jehan. It played itself out by the 18th century. With the decline of the power and prestige of the Moghul rulers, their architecture also declined.

Within this framework of time, the Imperial style of architecture born at Delhi had some affinities with Islamic building styles as developed in the far flung provinces of the country. The rulers of these provinces always willing to throw off the Imperial yoke, developed individual and characteristic styles in the different provinces. Thus, Islamic architecture in India has been categorized into three broad groups, (1) Imperial, (2) Provincial (3) Moghul. (*Brown, 1942, pp. 4-5*)

Due to historical reasons, the provincial style of architecture that came into existence in the Deccan had many peculiarities of its own. In other areas, local Muslim rulers made use of indigenous talent, and developed styles which reflected a fusion of original temple architecture with Islamic ideals and traditions. (*Ibid, p. 70*). In the Deccan however, the new rulers ignored the glorious traditions of Chalukyan and Yadava temple architecture, and developed an independent style whose roots lay in external sources. In this sense, the Islamic architecture of the Deccan was rather unique among the provincial styles. It was in reality a fusion of two mature traditions, both extraneous to the region. The imperial style which had gradually evolved in Delhi and the tectonic traditions of neighbouring Persia were both imported, and these two Islamic trends came together to form the Deccan style (*Brown, 1942, p. 70*).

The basic features of the style were undoubtedly received from the Imperial traditions which had grown to maturity by the 14th century. When Mohammed-bin-Tughluq attempted to set up a capital in the south, he also brought with him artisans and craftsmen trained in the Delhi style. These men were perhaps responsible for the 'fundamental character of the style' (*Ibid, p. 70*). On the other hand, the Deccan rulers, the first amongst whom was Ala-ud-din Hasan Behman Shah, a Persian from the Sultan's court at Delhi, looked towards Persia and West Asia for new inspiration. Moreover, the stream of adventurers flowing into India was constantly replenished by immigrants from these areas. The Persian engineers, workmen and artists who came looking for lucrative pastures, landed in West Indian ports, and left their mark on the structures built by the Bahmani kings in the early years. This merging of Persian and the Imperial Islamic style produced the unique structures which are still to be seen in the area. (*Brown, 1942, p. 71*).

This provincial architecture has been described as having three phases:-

(1) the earliest structures which were derived from the pre-Mughul Imperial style, mostly to be found at the early Bahmani capital of Gulbarga.

(2) the second phase shows the influence of the foreign styles from Persia and West Asia, and are mainly to be found at the second capital of Bidar.

(3) the fully developed style, with certain additions and adaptations from Hindu traditions. (*Mate, 1961-62, p. 3*).

The monuments of the Deccan were constructed to serve a variety of functions, so we find not only religious (mosques and tombs) but also secular structures (Palaces, madrassahs, fortresses, pavilions, halls, hamams etc,). The basic feature of these monuments was that they were mainly planned to create a two-dimensional effect. This resulted in special attention being paid to the outline and size of the structure. With spherical, cylindrical, rectangular and square shapes, symmetry and balance of outline was created. Domes, minars,

minarets helped the visual aspects of the skyline. Flat surfaces could not be relieved by deeply recessed carved ornament, as it would detract from the two-dimensional effect. Also Islamic religious traditions forbade the representation of living creatures in sculpture. Therefore, the flat surfaces had to be decorated by some other means. Low relief stucco designs in geometric patterns, or painted decoration was used. From Persian roots came the use of glazed tiles and brilliant polychromatic surface treatments. (*Mate, 1961-62, p. 13*). In the later stages, some outward Hindu features, like brackets, cornices or parapets were grafted on to the structures when stone began to be used for building at Bijapur. (*Ibid, pp. 12-13*).

The stylistic development of the basic features have been traced by others, and need not be discussed here. Suffice it to say, that when the Europeans began to build permanent structures in this part of India, they still found examples of the fully matured Deccan style all around them.

The early European travellers to the Deccan have left vivid descriptions of these. This so called 'Saracenic' style with its arcuate construction must have been more familiar to them than the early Hindu temple architecture. In the remains of the Adil Shahi structures at Bijapur, they found conspicuous examples of an advanced and beautiful tectonic tradition. This style had reached its peak in the 17th century, and continued even after the Mughal conquest in 1686, but began to decay after 1710. (*Brown, 1942, p. 97*). The typical features of the Bijapur style can be described in short:-

The most important feature is the dome which had become by then almost spherical in shape, with the outlines curving inward. This gave it a bulbous or onion shape, specially as the base was constricted. This narrow base formed a neck which was decorated with the characteristic bend of petal shapes. However, the dome was also used by now, more for the sake of creating an outline than for actual constructional purposes. It was no longer used to cap the entire space inside, but was more often than not only placed on the roof as decoration (*Mate, 1961-62, p. 74*).

The shape of the Bijapur arch is also distinctive. The characteristic arch of the Deccan was an Ogee, and through the general shape did not change, the arches became wider and took on the four-centred Tudor-arch shape. (*Brown, 1942, p. 78; Mate, 1961-62, p. 57*). They were also recessed, taking on the appearance of moulded arches like the ones to be found on Hindu temples. (*Mate, 1961-62, p. 57*).

Cornices and brackets were another feature of the Adil Shahi structures of Bijapur. These were of Hindu origin, and grafted on to the Islamic patterns. Cornices were widely projecting and supported by brackets which were mostly shaped like the letter 'S'. They were ornately carved in floral patterns, (*Ibid, p. 73*).

Surface ornamentation consisted of stucco relief and carved stone, and abstract designs and floral motifs painted on walls. (*Ibid, pp. 52-53*).

Though mosques and tombs of Islamic rulers followed a set pattern, the secular architecture, specially of the domestic kind showed the principal features of general eastern planning. Both palaces and lesser houses were built around open courtyards. Halls, darbar halls and galleries surrounded the courtyard. Often there were more than one courtyard at the centre of which cisterns or fountains were placed for decorative effect. A part of the square structure was often raised upto many storeys. Bijapur had one of seven storeys (Sat Manzil), where the kings resided in luxury. Separate pavillions for public darbars, water palaces at summer resorts, and painted halls were also added to the complex. Mahals or rooms exclusively for the women (Zenana Mahals) were built into the inner courtyards. (*Mate, 1961-62, pp. 46-48*). This courtyard pattern could lend itself to endless variety, as squares could be formed leading off from older ones, or within larger ones, thus allowing a house to be enlarged as necessity arose. Mainly facing inwards, the mansions presented blank walls to the outside and thus also ensured privacy as well as ventilation.

The Marathas ruled the Deccan for over hundred years and left behind numerous monuments of all sorts. predominantly, a military power, Shivaji and the Peshwas after him built innumerable forts and strongholds in the area. Besides these, they also constructed function-oriented structures like temples, palaces, mansions etc. Maratha architecture however was greatly influenced by the Bijapuri style, as well as by the style of Delhi and Malwa. It also kept its links with earlier Hindu traditions. (*Mate, 1959, p. 124*).

Many of the best examples of the civil architecture of the Marathas were destroyed by fire or otherwise during the 19th century, but descriptions of visitors and other literary accounts as well as some extant examples have come down to us. We learn from these that the domestic architecture continued the general eastern pattern of inward-looking quadrangular plans. Quadrangles were surrounded by pillared verandahs through which one could enter the halls and rooms beyond them. These mansions were often more than one storeyed. Decoration was applied on doors and window arches, on carved pillars and wooden brackets and shutters of doors. (*Mate, 1959, p. 25*). In the interior, palace halls were imaginatively decorated and designated for a particular type of decor. So we have Arse (mirror) Mahals, Ranga (painted ceilings and walls) Mahals, Asmani (a room the height of which is carried to four or five storeys) Mahals, etc. Wood formed a major part of the construction in the form of beams, pillars, doors, windows, frames and brackets. These were carved beautifully into intricate designs.

The Marathas also accepted the cusped arches and cyprus pillars which had first come into use in the Moghul period (Shah Jehan) and made it their own.

They 'used them on such a vast scale that they can be said to be chief characteristics of the Maratha architecture of the 18th century'. (*Ibid, p. 126*).

As regards town-planning, Western Deccan had many towns when the Europeans first came here. There were port towns like Surat which relied on the merchandise passing through it for prosperity. There were governmental centres like Poona, military centres like Raigad and Pratapgad, religious centres like Pandharpur and even resort or luxury towns like Toke. Most of these were old cities falling into one or other category of pre-industrial city groups. Their growth was organic and unplanned. But from time to time efforts were made to improve the civic amenities and street facades, as well as Municipal Governments. Let us take for example the old city of Poona. It was divided into wards or Peths, named after the days of the week or prominent personalities (Shukravar, Guruvar, Sadasiv, Rasta etc.). Areas were set aside for the various professional groups, like masons, potters, ironsmiths etc., who occupied special wards. The city in the early 19th century presented a picture of congestion and unplanned growth. Houses were crowded along narrow crooked streets, which were shaded by the overhanging balconies. (*Kosambi, 1981, pp. 195-196*). Functional use of space was mostly unnecessary. Work of public administration, educational needs, medical needs, places of entertainment and even jails were fulfilled traditionally in residential buildings, a part of which was set aside for such functions. (*Ibid, p. 177*). Thus, the old Poona city, fell within the world wide category of pre-industrial cities which were administrative and religious centres. (*Sjoberg, 1960, pp. 102-103*); *Kosambi, 1981, p. 254*). Indian towns therefore were quite different from those that existed in Europe during the late 18th and 19th centuries when the Industrial Revolution had changed the entire concept of town life.

CHAPTER THREE

URBAN GROWTH

The British established various new types of settlements in India. These were basically urban in character and reflected their predominantly urban cultural background.

By the 17th century urban growth had become a conspicuous feature of English life. This process was further hastened after the introduction of industrial technology. The cities of England began to be transformed into sprawling centres of industry, with consequent changes in lifestyles and work patterns of the urban dwellers. The pre-industrial cities took on the aspect of industrial metropolises. City walls were demolished and satellite suburbs grew around the major centres.

In India too, there were many types of urban centres, as already discussed. (*See above, Indian Traditions, p. 50*). These were all of a pre-industrial nature. The early settlement of the English in Bombay had some similarities with the indigenous cities of India, in that both were pre-industrial types. The English settlements in western India did not appear suddenly in a fully developed form reflecting all the features of the European prototype—the industrial metropolis. This was only natural, specially if we remember that when the colonists first came out to India, Britain herself was a pre-industrial country. The English settlements went through a process of evolution, till they reached the fully developed forms. Even then, there were important differences between a fully evolved Metropolitan European city and those that came into existence in India.

Wholly European towns were very few in number, and the most important of them were the three Presidency towns of Calcutta, Madras and Bombay. Apart from these, were the other types of settlements known as Cantonments and Hill-stations, which had specific functions relating to the activities of the Europeans. Most often the Cantonments were located close to older indigenous

towns. Their distinctive spatial arrangements and functions modified and influenced the older cities near which they were founded. The cantonment patterns have been discussed in a later chapter.

III. A. EARLY SETTLEMENTS

The earliest type of settlement was the factory itself, functioning within an enclosed area, either purchased or leased from the indigenous authority. The factory settlements were the most rudimentary forms of spatial arrangements established by the Europeans. All the early European traders vied with each other in setting up factories so as to form a base for their mercantile activities. Usually, they chose existing centres of trade, or strategic towns, which commanded the communication routes to the productive areas. These factories were in reality small settlements. They included warehouses, residences, store rooms, open courtyards, dining space and other necessary areas. Various functions were often performed within the same premises. The primary reason for their establishment was mercantile and all activities were geared towards this objective.

The Portuguese factories at Daman, Diu, and Goa were soon enlarged by acquisition of territory and political power, and evolved into proper urban patterns, which exhibited all the characteristics of the Renaissance towns of Europe. (*Nilsson, 1968, pp. 40-41*). The French and the Dutch, both set up factories in the thriving mercantile port of Surat. The English factories of Rajapur, Karwar and Anjangaon mentioned earlier, were small and not very significant. However, their factory at Surat was their most important base on the west coast. Thus, all three rival mercantile groups set up their own rudimentary settlements in the indigenous port city of Surat in the 17th century.

Surat was the great entrepot for merchandise into western India and was administered by a Governor appointed by the Moghul Court. The foreign merchants therefore had to set up their trading posts in the dominions of another sovereign power. The Moghul Governor kept a jealous eye on any evidence of aggressive behaviour on their part. They existed, as if on sufferance. The European factories could not be fortified without the permission of the Moghul king. They had to allay all suspicions by following a policy of conciliation towards the Indian rulers. They desired to be known as peaceful traders. Sir Thomas Roe, cautioned the Company Directors on this point, and was quite against building a fort or maintaining any armed force (*Rawlinson, 1920, p. 82*). The economic factor, no doubt, also played a part in the decision to follow a peaceful policy. Money was not to be wasted on soldiers and fortifications when it could be invested in increasing trade.

The early factories were mostly temporary structures. Resources were limited and the factors had to make do with whatever was easily available at the lowest cost. They followed indigenous methods and used local materials for

construction. The houses had clay walls and straw-thatched roofs, or were covered with leaves of the coconut tree. Such was the case in the Danish factory at Serampore; (*Carey, 1906, p. 18*); the British factory at Calcutta (*Nilsson, 1968, p. 46*) in the Dutch factory at Surat (*Ibid pp. 41-42*) and in the British settlement at Bombay.

The English also often hired existing houses from local people and established their factories. Such was the case of their factory at Surat. At Broach and Ahmedabad the factors hired houses on the Company's account, and left brokers to transact their business (*Andersen, 1856, p. 17*).

The Surat house was hired from Muslim owners. Various descriptions of it have come to us. Supposed to have been one of the best houses in Surat, it was built of stone and timber. We are told that the wooden elements were carved but 'without representation' because it belonged to a Muslim. (Local dwellings in Gujarat were famous for their intricate wooden carvings). The house was in many ways a typical example of its kind. Fryer, describes it as being double-storeyed, and arranged around a quadrangle. The ceiling on each floor made of plastered cement was at least half a yard thick.

The quadrangle was surrounded by galleries or covered verandahs. The rooms were used for various purposes. The President used a part of it as a residence while 'noble' rooms were set aside for council meetings and entertainment. The ground floor rooms opening on the courtyard were used as stores and godowns. The living rooms were all on the upper floor. There was an 'oratory' or chapel to take care of religious needs. Fryer also mentions a 'Hamam' for bathing, (*Forrest, 1887, pp. 53-54*).

The other early factories followed similar patterns of evolution. The un-fortified establishments had to be protected by rudimentary walls with impermanent materials, due to the deteriorating law and order situation in the country. The walls were not very high, nor durable, and were meant to give protection against bandits and thieves. Mud, clay, logs and sometimes bricks were used. For example, the Portuguese settlement at Chaul had a wooden pallisade, and the first of their forts at Cochin was made of wood. (*Mitterwallner, 1964, p. 39; Nilsson, 1968, p. 40*). In Bombay, Humphrey Cooke's first pallisade around the old Manor House, was of mud and coconut logs. (*See below 'Fortification', p. 158*).

As the century progressed and the Imperial administration disintegrated, the policies of the European traders changed. To meddle in Indian politics and to try and overthrow each other required better defences than mud and logs. The next stage of evolution was reached when stone and brick took their place in the construction of more permanent walls.

The Portuguese erected heavy stone walls and bastions in Diu, Daman and Bassein. The French, Dutch and English factories at Surat became enclosed within

stone walls. In Bombay the old pallisade gave way to thicker walls of stone, with bastions. The trend continued for a century and a half, until all the major settlements had been properly fortified.

In Bombay, the first stage of the enclave pattern had already passed, when Gerald Aungier (1672-75) succeeded Oxenden as Governor in Surat. Aungier immediately perceived the potential of this neglected little island possession. England and Holland being then at war, he expected trouble from the rival Dutch Company at Surat. He began hastily to provide protection to the small enclave at Bombay. He became the first Governor to reside at the island for more than two years and could personally supervise its development. Under his direction, the stocade was demolished and a solid stone wall took its place. A ditch was dug around the fortified house, now called Castle. Earthen outworks were also raised. Thus, the third stage of development was reached.

The 'four-square' house which had been taken over from the Portuguese had now been fully fortified and took on the aspect of a citadel. The Castle, or Fort House, as it was later called, was to be the home of the Governor of the Presidency for over a hundred years. Within the house, rooms were set aside for offices, as well as a Council Hall.

The next step was to encourage the growth of a settlement around the Castle. This was a project very dear to Aungier, who wanted to found "the city which by God's assistance is intended to be built". (*Fawcett, 1936, p. xii-xiv*) Bombay owes much to this man of vision who conceived the settlement as a planned urban entity, and gave her the heart around which the later flesh would grow and develop. He realised the value of the bay and planned to build a dock. The area he chose for his new creation was extensive by the standards of his day. Curving in a semi-circle around the citadel or Castle, it was "nearly three miles in circuit". It was chosen after much consultation with the "most experienced people of the place", because it was felt that this part of the island could be easily defended. (*Fawcett, 1936, pp. 44-45*). Land surveys were carried out and reports of it were sent to the Company. The Directors were roused to enough enthusiasm to send out the plans for the rebuilding of London then being implemented. It was meant to serve as a guide in the laying out of the new town. (*David, 1973, p. 314*). Aungier invited traders, artisans and others to settle on the island and build permanent houses with stone walls and tiled roofs. He planned regular streets and proposed to build an eight-foot high wall around it. (This wall was not completed till 1716). (*Fawcett, 1936, p. 45*).

The main street, a mile long was to begin at the Castle gates and lead to a bazaar. It would before long be lined with low houses, and come to be known as Bazaar Street. (*Douglas, 1893, Vol. 1. pp. 93-94*). The other construction was also taken in hand. Two large stone warehouses and dwelling houses for the factors were begun. A granary and a structure called "East India House"

was also built. A list sent to the Directors in 1677 included structures such as the Mint which made the coins for local use, and a 'Court of Judicature' where English law was to be disbursed as promised by the Company to the English Crown. This also housed the jail, and was an indigenous type house built around a courtyard. The other buildings must have been utilitarian structures, without much embellishment—low buildings of stone and timber with sloping tiled roofs, such as can be seen from artists impressions at a later date. The court was established in an area in the heart of the town at 'Mapla por'. (Mapla Pur).

Aungier established a rudimentary police system and began a militia of local people who were compulsorily liable for service in order to defend their own town. This was probably the earliest form of the East India Company Army. His wisdom as the originator of the policy of toleration was demonstrated when Bombay became a haven for various religious groups fleeing from intoleration elsewhere in the country. In 1674 it is said, 6,000 settlers came from Chaul. This was most likely an exaggeration, but Bombay was at the end of Aungier's short term well on its way to becoming a walled town, and though the founder's grave is untraceable, his creation remained vitally alive. The expenditure on planning the city, and its structures and services was sometimes criticized in a carping way by the Directors, but Aungier was so sure of having done the right thing that he offered to pay for them himself. (*Forrest, 1903, pp. 3-4*).

When the city walls were completed in 1716, the picture became clearer. The citadel near the bay with the harbour and dockyard served as the administrative-military centre as well as the mercantile base of the colonial community. Around it the town extended for a mile along its principal street which led to the Bazaar. Residential areas were jumbled close together near the fort and along the Bazaar Street. They were mostly low and thatched with leaves of coconut palms. Windows were small and narrow and since glass was not easily available, they were filled with small squares of polished oyster shells. This seems to have been a common practice even in the Portuguese settlements, and lighted the interior with a dim glow. Beyond the bazaar and the city walls were large open grazing grounds at the edge of which was a Portuguese monastery and church. To the south at the edge of the settlement was the English burial ground at Mendham's Point. Other Portuguese monasteries, colleges and churches were to be found at considerable distances from the Castle, at Mazagaon, Parel and Mahim. (*Wheeler, 1972, pp. 37-38 ; da Cunha, 1900, p. 337*). Obviously the religious groups were bold enough to live outside the protective shadow of the wall and the Castle.

In the intramural town, the Indians congregated to the north, in and around the Bazaar area, while the Europeans gathered to south of the Castle in straggling, but spacious one-layered groups. This area was faced by the open grounds soon to be called the 'Green' which also served later as an open store

for cotton bales. The first church was also raised here, as also the European soldier's barracks and a hospital.

At this stage, Bombay's appearance was strikingly similar to that of many pre-industrial cities in Europe and the rest of the world. Its spatial arrangements conformed largely to those of similar cities as classified by Sjoberg. (*Sjoberg, 1960, p. 323*). However, within this generality there were important points of difference. These differences of course, were mainly due to the fact that Bombay was founded by a colonial community with its own distinctive traditions and value systems. Being thus a colonial city in a pre-industrial era, it displayed similarities with other such colonial cities in India, viz. Calcutta and Madras. Though the colonists belonged to a particular cultural group (English) within their larger civilization (European), which they thought was technologically and culturally superior, we must remember that industrial development had yet to take place in England when the city of Bombay was first planned and settled. Bombay was therefore already a city when the rapid progress of industrialisation set in, in Europe. We have to see then how the technological and industrial superiority soon gained by England affected the economic political and social life of Bombay resulting in physical or spatial changes in the city.

Basically at this particular stage of its evolution, the function of Bombay was to act as entrepot or exit for goods, raw materials and people, including various different categories such as merchants, administrators, soldiers women etc. The port and harbour was its reason for existence. The commercial activity was controlled by the foreigners comprising of the servants of the East India Company and a few private individuals. Indian merchants geared their activities towards, or were associated with, the transactions of this Company. Since the trading company also owned the territory and became responsible for its government, its servants had to act as administrators. They thus became both commercially as well as politically powerful, and thus came to be regarded as the social elite. Later on, we can see how the contact between this group and the indigenous one carried out in the classic "dominance-dependance" situation as pointed out by King led their physical-spatial behaviour to become 'models' for those of the indigenous population who wished to cooperate closely with them. (*King, 1976, p. 25.*)

Thus the town's centre, i.e. the Castle and the harbour became the commercial, administrative and military hub of the activities of the colonial community and were in so far as this, different from the worldwide category of pre-industrial cities. (*Sjoberg, 1960, p. 323*).

III. B. WALLED TOWN (1750-1850)

Once the walls were completed the intramural city soon changed its character. Confined within its boundaries, but subject to constant increase of

its people it became closely packed with houses and other built-up structures. This was specially true of the northern part of the city. Left with no place to grow outward these areas grew upward, and a number of many-storeyed houses with overhanging balconies crowded the confined space.

Two maps of the form of Bombay in mid-eighteenth century give us a pretty clear picture of the layout of the walled city. One of these is Grose's map, (pl. 2) and the other is a French map done in 1757. Grose also left an account of his visit to Bombay. From these we can see that the walls are now complete with a complex system of bastions, ravelins etc. Three main gates or entry and exit points have been set up. A small fort [to the north, Fort George is also shown on the French map.

In front of the tetragonal castle is the open 'Green' and to its south are the dockyards and harbour. On either side of the Castle the important commercial and governmental structures are set out in a line facing the bay. The store house, warehouses of the Company, the home of the 'Superintendent of the Marines', the Marine yard, the Mint, Soldier's barracks and customs house are all to be found here. Streets generally run in a north to south direction. Towards the northern part they become narrower and more winding. This is the crowded area where the Indians congregated. To the south, the European section was more spaciously laid out. The dividing line was what came to be called Church Street, (the new name is Vir Nariman Road). The houses of the Europeans were around the edge of the Green, set amidst large compounds. Here also was set up the first Protestant Church (opposite the Green), a theatre and some shops. (*Forbes, 1834, 1, p. 95.*). There seem to be three hospitals already, one within the walled town for Europeans, one outside on the Esplanade, and one in Colaba for convalescing soldiers and officers.

Forbes describes the Indian houses as being built on the eastern pattern, around quadrangles. (*Forbes, 1834, 1, p. 96*). The overhanging balconies shaded the winding streets below. The houses were constantly being raised higher, specially the ones near the wall, as if to compete with it for air and light. In 1748, special rules had to be promulgated to regulate the indiscriminate building activity. (*Imperial Gazetteer, 1909, Prov. Series, I, pp. 219-224*).

The rest of the island, was rural in character. Just beyond the Church Gate, there were groves of coconut trees, as well as in the areas now known as Dhobi Talao, Girgaum, and Chowpatty. There were some Portuguese homes in Mazgaon.

Important topographical change were taking place on the island too. Since the time of Governor Boone (1716-1720) attempts had been made to make a wall at the Great Breach. This would allow the 'flats' to be reclaimed for cultivation, as well as the building of roads linking the town to the other parts of the island.

This was completed by the beginning of the 19th century, and was known as Hornby's Vellard, though it is not known for sure if he really built it. The gradual blocking of the breach dried up the marshy flats, and also improved the climate. From Cumballa Hill to Worli, the gap was now closed. By 1803, Sion Causeway linked the island to the mainland. The five separate islands were now one, and only Colaba remained unconnected. The Esplanade had been levelled and extended and was as "smooth as a bowling green".

Meanwhile, economic stimuli brought in more and more immigrants who contributed to the prosperity of the town. When the Wadia family came to the island, ship-building operations rapidly improved the mercantile potential of the harbour. (*Spear, 1932, p. 66*). In an enthusiastic exaggeration, one traveller describes Bombay in 1754 as 'the most flourishing of any place in the universe'. (*Ive's Voyage to India, quoted, Spear, 1932, p. 75*). Another account describes the flourishing market place and the dock which was now capable of taking bigger ships. The Indian merchants were prosperous and sold all kinds of foreign and indigenous goods, They lived in 'tolerable' houses. The European houses were built of stone and cement (chunam). (*Rennet, quoted in Ibid*).

Spear has made the interesting observation that those travellers who only knew Bombay, found that its houses were handsome and comfortable. These included Ovington, Rennett and Parsons: while those who knew the east coast as well, thought them to be small and unpretentious,—Niebuhr, Forbes, and Valentia, (*Spear, 1932, pp. 72-73*).

At this stage, Bombay began to take on the attributes of a colonial city as classified by King. (*King, 1976, pp. 22-40*). According to him, there are three variables determining the spatial characteristics of colonial cities—cultural contact between two different cultural groups, the differing levels of these two cultures in the forms of their 'technological, social, economic and political organisations and development'; and the fact that this contact takes place in a 'dominance-dependence' situation. All three were present in Bombay at the end of the 18th century, and left their effect on the physical-spatial form of the city.

Moreover, those in authority, that is, those in charge of the planning of the city were also those who stood most to gain by this planning. Administration and capital were concentrated in the hands of the same group, the English servants of the mercantile East India Company. The model as far as they were concerned, was the 'metropolitan' (English) one. However, inspite of conscious efforts to reproduce the prototype of English town layouts, the city of Bombay was, like other colonial cities essentially different from the metropolitan model.

The most essential difference was the phenomenon of racial or ethnic segregation. It most pre-industrial Indian towns a certain amount of segregation always existed. This was based generally on caste, communal or occupational groups.

It was the habit of these small groups to cluster together in certain areas of an otherwise homogeneous town. There were whole streets occupied by certain professional groups like potters, weavers, money-lenders, jewellers performing their manufacturing as well as retailing functions from the same premises, which were also their dwelling places. This phenomenon was present within the Indian section of the town, and is true, though to a much lesser extent even today. It is a quaint hangover of pre-industrial habits in a rapidly industrializing time. The typical colonial segregation we are referring to, however, was a much broader division between Europeans and Indians based on race and colour, and the result of the power structure inherent in colonialism. In the early stages of the settlement, it may have had something to do with natural social and cultural factors, a natural tendency of birds of the same feather flocking together. (*See Tyabji in JBBRAS, Ns, Vol. VI, 1930, p. 292*). Later on this became an unwritten convention as the southern part was developed into a culture-specific-urban model based on the English prototype while the nothern section was allowed to grow unchecked till it threatened the existence of the entire town. The seat of the government, the residences of administrator, the military barracks and, the seat of the head of the police force, were all in the southern section. However, in Bombay this segregation, though spatially demarcated was never solidified into an actual wall or any other physical barrier, as was the case in Madras.

Again, it was the power-structure of colonialism which finally, after the initial neglect made belated efforts at a type of planning which put to much inconvenience the Indian section of the population. Around 1772 orders were issued reserving the areas south of Church street specially for Europeans. (*Pusalkar and Dighe, 1949, p. 69*). The dwellings of the poorer indigenous sections were removed from the area between church and Bazaar Gate. Again when the Esplanade was extended, the spill over of indigenous dwellings which had sprung up beyond the walls was demolished.

Official distinctions between "white" and "black" towns began to be made quite often around this time, though mention had been made of the 'black' town in stray references of travellers much earlier. The official reasons for the demolitions were on the grounds of hygiene, health and military security. However, this pattern conforms to a general one in Indo-British relationship of the time. It coincided with the period of aggressive imperialism of the Welleslian type when, to maintain the imperial image the colonial community felt the necessity of isolating itself from the indigenous people, specially in the matter of their lifestyles and cultural traditions. (*Nilsson, 1968, p. 165; Spear, 1963, pp. 34 ff; Woodruff, 1963, I, p. 383*).

A special committee was set up in 1787 to look into the matter of replanning the congested areas. It consisted of the Land Paymaster, Collector, and Chief Engineer. This committee made various suggestions. The built-up area had extended very close to the town walls. Militarily this was considered a security

hazard, as an attacking force could fix targets and bombard these houses which were often raised higher than the walls. If one caught fire, their closeness to each other would allow the fire to catch on and spread to the whole town. The committee felt that the height of the houses should be limited to 32 ft. (from ground to eaves). The main road was to be widened to 50 ft. and cross streets of 25 ft. width were to be laid. The smaller lanes were to be 15 ft. wide, and all shop projections on the streets were to be removed. (*Edwardes, 1902, p. 227*). How far these recommendations were put into effect, or how much they helped matters is not known. A damaging fire did break out in 1803 and destroyed in one sweep, over four hundred houses (*Ibid, pp. 229-230*). After the fire, the inhabitants of this section were forced to re-build outside the walls.

After 1813, when the monopoly of the Company came to an end, the economic and administrative status of Bombay suddenly took on a new importance. A spate of building activity was now undertaken. The commercial centre reflected this change within a few years. During the governorship of Mountstuart Elphinstone (1819-1827) a number of structures were erected for various administrative and commercial functions.

These buildings were quite different from the earliest ones. They were more permanent and less utilitarian. They were built in the neo-classical revival style then fashionable in Europe. The most representative of these and the most important architecturally were the Mint and the Town Hall. (These are discussed separately later). The latter stands in a prominent place and overlooks what was then the Green. The Mint lay just behind it. The Customs House, dockyard and Arsenal quite close by, were improved upon, and were described as "handsome" (*Moses, 1850, pp. 53-54*). Other construction work was carried out by the enlargement of public tanks, and laying of new roads leading out of the town and along the esplanade. The latter was levelled and extended to another 2000 ft. A neo-classical church was built near the dock and was known as the Scotch Kirk.

Thus, the concentration of impressive buildings around the commercial centre (Green) reflected both the commercial pride and the new political power of a more confident government.

Apart from the central focal point, the walled city does not seem to have changed much. The European section was made up of spacious bungalows in individual compounds. Their needs were met by many shops which were well stocked with merchandise, haberdashery, and fancy imported goods. These were generally owned by Parsis. There were two bazaars in the northern part known as China and Chor Bazaar respectively. (*Postans, 1839, pp. 25-26*). To meet the recreational and social needs of the Europeans there was the Bombay Theatre, Yacht Club, Golf Club etc. (*Douglas, 1909, p. 52*). There were also hotels, chemists and even the odd dentist (*Kincaid, 1973, p. 150*).

The northern part was crowded, inspite of the fire and consequent demolitions. The indigenous houses packed close together, almost encroaching on the narrow winding streets and shading them with their overhanging balconies created a maze-like impression. The houses were decorated with profuse carving on the timber elements. (*Edwardes, 1902, pp 256-57*).

It was mainly around this time that Bombay developed another characteristic—a pattern of suburbanisation. This was a prominent feature of 18th and early 19th century urban growth in Europe, as King has pointed out (*King, 1977, p. 129*). In Bombay, this pattern proved to be a dynamic process expanding the town far beyond the walls and leading to the culmination of turning the city into a metropolis and the abandonment of walled protection. In a way it was a logical development. The walled city, now known as the 'Fort', had become congested and hot. The walls prevented the circulation of sea-breezes. So, the obvious was to move outside the walls and build homes where the cooling breeze was unobstructed. At least, part of the time could be spent in these 'country houses'. The French wars were over, and the Europeans felt it to be safe enough. At first these country houses were used as leisure retreats, but gradually they came to be used as full time residences. However, the houses within the Fort were not abandoned. They were useful in the rainy season when it was difficult to traverse the muddy roads of the island on horses and on coaches. Since the Fort remained the commercial and administrative centre, residents had to come to it every day to enact their business. A similar trend is seen at Calcutta during this time where also, houses were being made outside the Fort and used as country residences. (*See Tyabji, in J.B. B.R. A.S., N.S. Vol. 1930, p. 293*).

The Governors too acquired a country house at Parel (which soon was to become the full time residence) and later, one at Malabar Hill. The individual houses came up along Backbay, on the ridge of Malabar Hill, and in Parel, Mahim, Mazagaon and Byculla, the last two fast becoming fashionable European suburbs. The process continued throughout the 19th century, till these clusters of houses amidst the 'Oarts and groves' of the island, grew larger to merge with the metropolis when the walls were finally demolished.

According to the census report of 1826, there were about 890 European houses in the Fort. Of these 432 belonged to Englishmen, and 359 to Portuguese owners. The Parsi-owned houses numbered 6,303. In spite of the heavy investment within the Fort, the wealthier Parsis also began to build houses outside the city in the European suburbs. Byculla had around 51 such residences, Dongri 46, Mazagaon 82, Malabar Hill 59, Mahim 32, Girgaum 61 and even the still detached island of Colaba had a large concentration of 175 (*Gazetteer, C & I, 1910, pp. 161-66*). Colaba was reached by ferry till 1838 and the causeway connecting it to the main island was not completed till mid-century. By then the cantonment had been moved there. Many private individuals, mainly Parsis invested in estate holdings and built bungalows which were given out on rent to Europeans.

The spillage from the northern part of the town was, as we have seen accelerated after the fire of 1803. The administration encouraged the outward movement by various means. Plots of land outside the walls were sold cheap and compensation paid for the old intramural ones. This spillage developed into a new town beyond the walls, and has been referred to as the 'Black' town by travellers of the time. This also soon became congested and the houses became closely packed together. The main street wound through the commercial area and was called Bhendy Bazaar. (*Shepherd, 1857, p. 16*). Thus the expansion of the indigenous section, even though encouraged by the authorities, was allowed to become haphazard and unplanned. However, many Parsi families still lived within the walls, as well as some of the prominent Hindus (Gokuldas Tejpal) and Bohras (the Tayabjis), though some had built houses at Dongri and Byculla.

The most pressing problem of both the Fort and the new residential areas was water shortage. Elphinstone had ordered the sinking of wells on the Esplanade, but by 1830 these had become inadequate, and periodic water famines had become common. A 'Committee of tanks and wells' was appointed. Its members were the Revenue Collector, Chief Engineer, and Secretary of the Medical Board. An engineer was loaned to the committee to frame plans and estimates. Several wells were dug and the existing ones were deepened and made larger. (*Gazetteer, C&I, 1910, 11, p. 146*). Some wealthy persons in the Fort had private wells, but the water from these was often unpotable because the foul water of the moat percolated into them. Inadequate and polluted water remained a major problem till 1860's.

Upto the mid-nineteenth century then, Bombay presents the picture of a pre-industrial city while also fitting into the pattern of other colonial cities, showing ethnic and racial segregation. Meanwhile, the population increase, and other factors have resulted in a spill over of people outside the walls. The European (and 'Westernized Indian') sections grew in clusters which soon developed the characteristics of suburbs, even though pre-industrial methods of transport must have made it difficult for their residents to commute to the commercial and administrative centre in the intramural area. Moreover, there was an ethnic pattern to the growth of these suburbs, in which the English moved out the furthest and were spread over a wide area, though their numbers were the least. There were concentrations of Portuguese at Girgaum, Dongri and Mahim; Parsis at Dongri, Girgaum and the Fort, and some at Malabar Hill, Mazagaon and Colaba; the Hindus and Muslims lived mainly in the new 'Black' town and some at Dongri and Byculla. In spite of all this, Bombay did not lose its rural look till the end of the 19th century. (Pl. 7.)

One interesting side effect of this early suburbanisation must be mentioned here. Those Europeans who could not afford country houses outside the city, found a novel method of beating the summer heat. During the rains they lived in their houses in the Fort. At most other times of the year they built 'temporary houses' on the esplanade. This area had become a sort of promenade for the

Europeans who congregated there in the evenings for relaxation, social communication and to 'take the air'.   Here 'at the verge, a fine sand forms a delightful ride or drive, meeting a strip of grass or meadowland ...... is covered with temporary buildings' (*Edwardes, 1902, p. 258*).   These were made of bamboo and mud walls and thatched roofs.   Some were just large tents covered with thatched roofs. They had porches and bamboo fencing covered with creepers and temporary gardens made up with potted plants.   Inside, the walls and ceilings were covered with coarse dyed cloth.   Floors were covered with China matting and the 'house' was fully furnished according to European needs.   Beds, chairs, tables, lamps, and even pianos and billiard tables were arranged within.   Thus the atmosphere of home was created in 'al fresco' surroundings and made as comfortable as possible. (*Postans, 1839, pp. 12-14; Moses, 1850, pp. 190-192; Edwardes, 1902, p. 258*).   This type of existence perhaps came to an end when the urban growth of Bombay made it impossible to use the esplanade in this manner any more.

III C.   METROPOLIS 1860-1900

The most important stage in the development of Bombay city took place in the four decades after 1860.   During these years the city developed into a metropolis and shed its pre-industrial attributes.   This growth was due to inter-related political, industrial, economic and other causes.   The advent of industrial technology was felt at the same time that British imperial power overcame the last great resistance to it, through the suppression of the great uprising.   (The first cotton mill was also set up in 1857).   Military safeguards in the form of a garrison within the city were no longer necessary and the soldiers were moved out of the walled area into Colaba which developed as the cantonment.   Meanwhile, the sixth decade of the century was that of the boom in the cotton trade and the share market. The influx of wealth allowed the government to take into hand vast constructional projects for the improvement of the city.   This period coincided with the governorship of Sir Bartle Frere (1862-1867).   The government took the initiative in large scale construction works, sanitary improvements and town planning.   The process began during the 1860's and lasted till the end of the century.

The Municipal Act of 1858 had set up three Commissioners with overlapping powers.   This body was unpopular and ineffective.   At Frere's initiative, a new Act was passed in 1865.   By it, one commissioner was appointed for the three years by the government, and vested with the entire executive powers. (*Edwardes, 1902, p. 286*).   This improved matters, as decisions could now be taken more easily.

Another of Frere's first act was to appoint a commission to enquire into the sanitary conditions and requirements of the city.   A comprehensive and practical report was submitted by A.A. Leith, the Deputy Inspector General of Hospitals, in 1863.   The report gave details of the state of sanitation, and proved to be the starting point of Municipal improvements.   The Municipal Act of 1865, itself resulted from this report.   A system of municipal self-government was

thus born. A municipal fund was created and put in charge of a corporate body made up of Justices of Peace. These had so far been restricted to almost nominal connections with the administration of municipal funds. They were now 'invited to undertake with the cooperation of the government, those sanitary reforms and other municipal improvements much needed in the city' (Frere Collection, address by Justices of Peace, 1867).

Leith's report is invaluable as a source of information about the condition of the city and the island in general. We learn that individual residences had spread further and the small suburban groups had grown larger. In the middle of the island the low grounds which had been reclaimed from the sea in the last century were used for rice cultivation. Marshy lands to the east were used as salt pans, and 2,000 acres were under plantation of coconut and date palms.

There were small fishing hamlets and clusters of huts of labourers near quarries, mills and other works which had come up without any sort of control or without any arrangements regarding sanitation. The danger of these developing into large slums was very real. Since there were no sanitary arrangements, the inhabitants of these clusters "took to the fields and gardens and polluted the air". (*Leith, 1863, p. 7*).

Even in the suburban districts the European and Indian houses which had adequate sanitary arrangements within the house had no provision for their numerous servants who "have to transgress either on their own or neighbour's grounds". (*Leith, 1863, p. 7*).

Within the walled town, conditions were worse. The report discussed the inadequate number of privies in the northern part of the town. A primitive night-soil dispersal arrangement, inadequate sewage disposal and drainage, and lack of water, made the back lanes of houses into veritable cess-pools. In some areas, privies emptied onto the main road. As a result a large number of cholera deaths took place every year. The report states that fever (probably malaria) was the cause of many deaths in all parts of the island, and was attributable to the marshy grounds.

Bad drainage resulted in annual flooding of the 'flats' which remained under stagnant water for three months during the monsoons. Leith recommended that a new drainage scheme, already under discussion should be implemented quickly. This scheme embraced the fort and native town as far north as Kamathipura and was technologically more advanced than any previous scheme. It comprised of gravitating sewers 'emptied by machinery', discharging into the harbour tide-way. The scheme included house drainage by a water flushing system, but difficulties arose due to scanty water supply. Leith also recommended that a single officer be appointed to oversee the health of the town, and a body of Inspectors of Nuisances be created.

Any new streets were to be at least 36 feet wide, and more drinking water fountains were to be provided. Old and dirty tanks and wells were to be filled up, and arrangements to drain the salt marshes were to be made as quickly as possible. (*Ibid, pp. 8-28*).

Periodic water famines had led to a scheme which was to utilise water from the reservoir built in Vehar valley seven miles north of Bombay. The lake had been finally finished in 1858, and the water was brought into the city by iron mains and distributed all over. But this supply was only five gallons per head, and many parts of the island were still without good drinking water. By 1863, the Vehar water scheme, private and public wells, and existing tanks (Pharsee Talao, Dhobi Talao etc.) had become totally inadequate for the growing population. So a new scheme was begun called the Tulsi Scheme. The project was to build a dam on the Tasso river and divert its water to the Vehar lake. It was finally completed in 1879 and it considerably improved the situation. To keep pace with the growing need, a further project, the Tansa Water Works was completed in 1892 by the P.W.D. Thus, throughout the second half of the century, a constant effort had to be made to meet the water needs of the city through massive projects (*Gazetteer C & I, 1910, III, pp. 32-36; Leith, 1863, pp. 20-28*).

The Leith Report was accepted by the government and its recommendations were acted upon. The drainage and water supply schemes, the enlargement of roads, and the improvement of the markets, led to an overall improvement of the general health of the city and island.

The topography of Bombay, man-made to a large extent, underwent further changes. The central part of the island had already been reclaimed by the completion of Hornby's Vellard. The other reclamations initiated during the second half of the century, were on the eastern foreshore, between Wadi Bunder and Chinch Bunder around 1865. An elaborate scheme for reclaiming land in the Back Bay area was begun at the same time. This project can be directly linked to the growth of the railway companies. The need to accommodate the lines and junctions was also reflected in the new plan for the town. With the shifting of the cotton storage to Colaba, the B.B.& C.I. Company felt that they could gain a lucrative tariff by transporting the cotton from Colaba to the docks and elsewhere. The Back Bay scheme formed in 1863 would have helped the extension of the railway, as it planned to reclaim almost 1500 acres from the sea, from Chowpatty to Back Bay. The filling up of the Colaba Creek, and strengthening the foreshore was a part of the scheme. This would have allowed the railway tracks to be laid along the latter. The work was begun with capital investment from private individuals including Premchand Roychand, and about 300 acres were reclaimed. When the American Civil War ended, and the Bank of Bombay crashed, the Company was closed down and the work had to be abandoned.

A few years later, the lines reached Churchgate (1879's) where a station was built. Its progress was rather slow after this, till it finally reached the cotton

depot in 1893. A station was built here, part of which still remains in a state of ruin. Within 35 years however, the cotton depot was shifted out from Colaba to Sewri, and the line became non-paying. The railway was cut back to Churchgate where it still remains and the Colaba area was also extended by large-scale reclamation of land undertaken by the Port Trust which had replaced the Elphinstone Land Co. The harbour railway began to lay down goods sidings and lines over the reclaimed areas. Other reclamation work was begun between Bombay and Trombay in 1863. (P.W.D. Gen. 45 of 1863). Most of these were entrusted to private companies as was common practice in England at the time. The Home Government was always keen that English capital should find room for development in India; the Bombay government was called to account for neglecting offers of private European companies in the matter of these projects. The former however, protested that it was doing all in its power to see that introduction of European capital was not hampered. Moreover, it felt that the wild making and selling of stock by speculators had to be regulated. Therefore, in conjunction with the Chamber of Commerce the government framed rules for the submission of new projects. The new rules stipulated that a certain sum should be subscribed for, and a proportion of such subscription should be paid, before the government could decide to select the best scheme. (P.W.D. Gen. Public Letter to Home from P.W.D. Bombay, 1861). Apart from the Back Bay Reclamation Scheme, there was the Dak scheme, Kennelly Pier Scheme etc.

Private ownership of such important projects which would affect the future topography of the island was gradually coming under scrutiny at this time too. With the growth of local self-government through the Act of 1871, when the first elections for a Municipal Council took place, it became a matter of principle for the public to have a say in such matters. For the first time a public sector undertaking was set up in the Port Trust which was to buy up private docks like the Sassoon (1889) and take charge of future reclamations and growth of the docks.

The most visually important developments of the time, however, took place in the areas of town-planning and spatial arrangements and architectural aspects of Bombay.

In the new political context, (after 1857) walls were redundant as means of military protection. In fact, they occupied valuable space which could be utilized to better effect. The moat was full of stagnant water which seeped into the wells within the fort and polluted them. The stench of decaying matter in the moat and the breeding of mosquitoes must have contributed to the fever epidemics in the city. As early as 1841, there were discussions about demolition of the walls and some parts of it, between Apollo Gate and the dock were dismantled in 1855. (*Edwardes, 1902, p. 265*).

Frere set up a committee for the "Removal of the Ramparts". It was proposed to dismantle the walls and fill up the moat with debris from the walls.

The grounds thus made available by the levelling of the walls were to be given in allotments to the highest bidders, whether individuals or companies. The money raised thus was to be constituted in a fund for making public buildings.

The walls were demolished in 1862, and the moat filled up at the same time. The esplanade was thus enlarged and no structural division existed any longer between it and the city. Two broad roads, Esplanade Road, and Hornby Road were made in this area (*Burns, 1918, pp. 8-9*).

The Rampart Removal Committee began a number of projects between 1864-1867. They planned new sites for government offices and public buildings, which had by now become dilapidated and inadequate. Buildings for public institutions were assigned sites in the overall planning.

The main focus of planning was on the newly extended esplanade area. A grand procession of impressive buildings were projected along the esplanade facing the sea. This was to concentrate the wealth, power and civic pride of the city at the waterfront and provide an unbroken panorama for incoming visitors on the seaward side; the choice of the Gothic revival style, then fashionable in Europe, ensured an interesting skyline.

Stretching from the Cooperage and taking in the area of old Apollo Gate, (where now stands Jehangir Art Gallery), northward in a semi-circle to the old St. George's Fort, a magnificent row of massive structures were planned though the original drawing by the architect Trubshawe shows a slightly different layout from the one finally put into effect (Pl. 8) J. Trubshawe was appointed Architectural Secretary to the Ramparts Removal Committee, and seems to have given up a lucrative practice to become architectural advisor to the Bombay government. Hence, his influence on the architecture of Bombay was extensive and permanent. Frere had thought it absolutely necessary to employ a trained and experienced architect for the large scale improvements which were to be attempted. (P.W.D. Old Series, 16.)

Stretching along the edge of the esplanade the drawing shows about forty buildings, both public and residential, as well as shops and quarters for warrant officers. These included Post and Telegraph Offices, civil and military pay offices, a church and a hotel, officer's residences, a secretariat, High Court, University, shops with residences above, the European Hospital, Warrant Officer's quarters and the School of Art. A railway terminus to south was also projected.

The actual implementation was a little different. The esplanade was left in the form of open maidans; while all the public buildings were ranged on its edge, the (Old) Secretariat, the University Library with its tower, and Senate Hall, the High Court and the P.W.D. Secretariat were in one line. Beyond it was the Central Telegraph Office. Turning inwards near the northern end of the old

wall, (Bazaar Gate) another focal point was created. On this point, stands the massive Victoria Terminus, dominating the precinct.

From the triangular space in front of the Terminus building, broad roads branch off in three directions, following the sides of the triangle. The V.T. occupies the base of this triangle, and at the angle to the north stand the Municipal offices. Along one side of this structure, a road leads to Dhobi Talao. Along it is another succession of buildings—Police Court, Cama-Albless Hospital, St. Xaviers College, and Elphinstone High School. This group came up mostly in the last fifteen years of the 19th century. On the other side of the Municipal building, along the road now called Dadabhai Naoroji Road, other impressive structures including the J.J School of Art, and the Times of India office came up. Between Elphinstone School and the School of Art was constructed the G.T. Hospital—forming on the map, another triangle.

To the south, radiating from a central circle, roads leading south towards Colaba, north towards the esplanade, and west towards Back Bay, were projected. At this focal point stands the 'Sailor's Home' (now Council Hall, where earlier there was the old cemetry of Mendham's point), an impressive Gothic structure. ('The Meseum' built in the early 20th century is at the opposite corner). Other important structures housing private offices and colleges came up at different points, like the headquarters of the B.B. and C.I. Railways opposite the old cottage-type Churchgate station, Wilson College, at Chowpatty, and Elphinstone College. Another commercial centre or focal point came up around the Flora Fountain where Church Gate used to stand. Later on many individuals built large houses near it, and also offices, stores, and financial institutions like the Oriental Bank building designed by F.W. Stevens in the neo-Gothic style.

The vast plans were not of course completed during Frere's governorship, but once begun, the work continued apace throughout the rest of the century. One project begun earlier was completed during Frere's term. This was the transformation in the area of the old 'Green'. Supposedly begun by Charles Forjett, the project was an impressive demonstration of town-planning and street-facade architecture. Since the Green was no longer required as a parade ground (as the Cantonment was shifted to Colaba) nor required for the purpose of cotton storage (which was moved to Colaba in 1844) it was decided to sell plots from it to private mercantile firms by the municipality.

The plans were made by James Scott an architect (*Gazetteer, C & I, 1910, p. 172*). The firms which bought the plots followed the general design. The structures present an unbroken front along the circular space which is all that is left of the Green. The circular street around this had a wide pavement shaded by classical porticoes projecting from the buildings in an unbroken line. The style used for these structures was not Gothic, but had classical and baroque

elements. Thus a clashing of styles was avoided, and the new buildings harmonised with the neo-classical Town Hall which still occupies a place of prominence in the precinct. The Elphinstone Circle as it came to be called, bore a striking resemblance to street facades of contemporary European towns. The old commercial centre of the Green, preindustrial in nature, was unrecognisably changed to reflect new and more modern business methods. Through the concentration of the offices of the city's premier commercial firms, it became the expression of its mercantile pride.

A complete network of new roads were also projected, and old ones renovated and widened. Colaba causeway was widened between 1861 and 1863, and the main roads repaired and improved. (These included the Esplanade Road, Rampart Road, Hornby Road, Bori Bunder Road), Generally the main roads still ran north to south and were intersected by east-west streets. In the Indian or native town, these were still short and tortuous. None led to the shore or provided channels for the cool sea breeze to enter the overcrowded areas. (*Leith, 1863, p.8*). A project to widen and improve these roads was also discussed.

By 1867, a million sterling had been already spent on the improvement of the city, with an estimate of one and a quarter million more for the other works begun. (Bombay Builder, 1866-1867). Much of the money for the public buildings was donated by the wealthy Indian citizens of Bombay. The various Shetia families who had become prosperous following the cotton boom and the China trade, willingly cooperated with the Government's plans and subscribed heavily towards the structures. They also set up drinking water fountains, endowed hospitals and schools and thus were involved in the process by which Bombay came to be regarded as the 'Urbs prima in Indis'. By the time he left India, Frere's many-sided interests had made Bombay the 'most sanitary city' of the East, and it is said that at the time, the mortality rate in this town was lower than that of London. (*Bence-Jones, 1973, p. 129*). Compared with Ovington's famous statement that two monsoons constituted the life of an Englishman in Bombay, this was an impressive record indeed.

The momentum of construction and planning activity flagged for a short while in the last decade of the century. Growth of population always seems to have outstripped the planning. The appearance of Bubonic Plague created havoc in the city and brought home to the government the need for further improvements by relieving congestion. The City Improvement Trust was created in 1898; this body projected an ambitious programme of replanning of streets and creation of a residential quarter in the northern section of the island. This was begun in the early years of the present century and is beyond the scope of this book. (*Burns, 1918, pp. 8-9*).

Between 1870 and 1890, more evidence of the technological age came to be seen Bombay. The horse-drawn tramway, gas lights for the streets, (by 1885,

there were more than 2000 of them) and projects for disposal of night soil by water dispersal systems, came to stay. Health hazards like cowsheds and abattoirs were shifted far to the north to Bandra, Dadar and even beyond.

During this period the water supply again became inadequate. The Tansa Waterworks Scheme projected at this time has been mentioned earlier. The project was to cost a stupendous 123 lakh rupees. The river Tansa was to be dammed about 34 miles from Bombay and the reservoir raised 133 ft above the river bed. This eight square miles [of stored water was to be brought to Bombay through tunnels and conduits which would carry it above the Bassein Creek in iron pipes. This new system, it was hoped would meet Bombay's water needs adequately for a long time to come. (*Hunter, 1891, p. 324*).

Thus by the end of the 19th century, the town had shed its restricting walls and developed into a metropolis with a considerable sprawl. Throughout the hundred years before the mid-nineteenth century, the growth and development was largely unplanned and organic. In the second half of the century however, with the advent of modern technology and industry, through the growth of railways, mills and capitalistic business methods, not to mention sudden prosperity, it was possible to give much thought to planned improvement. This was further possible by new forms of urban control—the setting up of a police force and the Municipal Act of 1865, and also the birth of local self-government which led to a measure of public control over the topographical and physical-spatial changes. The planned improvements were made possible by the efforts of three different groups—the government, and particularly the Governor Frere, the private citizens who donated princely sums to aid the government's projects as well as set up charitable institutions; and the mercantile firms which co-operated with the planning projects in as much as they built their offices according to the regulated patterns. The use of capitalistic methods of speculative land development and reclamation, together with a continuous building activity gave Bombay's European areas a westernized look. The impressive concentration of Victorian Gothic buildings reminded travellers of European towns which they had seen or lived in (*Karkaria, 1915, p. 188*). Bombay's civic development did in fact have a lot in common with that of many European towns in the 19th century. Two important examples come to mind—that of Paris where Haussmann was redeveloping the city with its boulevards and vistas, and that of Vienna where the walls were pulled down and Ringstrasse built, and along the green belt a number of majestic public buildings raised in neo-Gothic and other revival styles.

In the Indian part of the city and its suburbs however the congestion continued, made worse by the building of tenements (chawls) on a speculative basis. The growth of mills in various areas also drew the rural population into the sprawl of the city and they settled around the mills in squalid slums. The provision of amenities for this evergrowing mass had already begun to prove a problem for the authorities, and would increase day by day, till it become (as it indeed has) all but insoluble.

COLONIAL SUBURBS— CANTONMENTS

We have seen in the preceding chapter how minuscule settlements outside the walled town of Bombay became incorporated within the spreading city. When the walls were finally pulled down, these areas became indistinguishable from the metropolis.

There were other European settlements outside the colonial towns, which also developed suburban features. These settlements were the Cantonments and Civil Stations which were usually set up away from the heart of the city. They had a particular spatial arrangement and were designed to serve specific functions. There was a broad similarity between cantonments and civil lines all over India. These settlements or 'camps' had originally served predominantly military or administrative functions, but later, they began to function as suburbs of large settlements. They also were an unique and specific feature of the life of the colonial community and could be said to be a contribution of the British to Indian urban patterns.

There were two broad categories within which these settlements fell. One type was the military cantonment attached to towns created by Europeans for example, Calcutta, Bombay and Madras. The cantonments of the other category were attached to older indigenous towns. These had previously either been the centre of administration and military power or they had a great effect on the psychology of the Indian population, as cultural, religious or commercial centres. Towns like Lucknow, Poona, Delhi and Varanasi held a special place in the sentiments of the population. When such places were conquered, it was necessary to get the people accustomed to the presence of alien rulers and to new forms of administrative and military control. At first therefore it was logical to set up the troops within the conquered town, and specially in the existing citadel or fort.

Quite often new forts had also to be built according to European military standards. These formed easily defensible concentration points for troops in the midst of newly subdued local population. From the fort or citadel the small garrisons could defend the town and surrounding areas also, in case of an attack from outside.

Political and military conditions changed, as much larger areas came under British suzerainty at the end of the 18th century. The forts could no longer guard these areas and a new strategy had to be evolved. The rapid growth of British imperial power meant that troops always had be in readiness for quick mobilization and fast movement. This was best served in deploying them in a more spacious manner at the edge of the town rather than in the cramped and enclosed strongpoint at the centre. Two important functions were be served by this—greater mobility and efficiency was achieved for both defensive as well as offensive purposes, and no great changes were required in the existing patterns of the already crowded towns. (*See Nilsson, 1968, p. 76*). Moreover, the troops whether Indian sepoys or British soldiers, could be effectively isolated from fraternizing with the local population by removing them beyond the outer perimeter of the town.

These encampments were set up at a short distance from the town. Later on, as the new administration was set up, the officials connected with the new systems were settled either in the encampment or close to it, but, away from the Indian town. These areas came to be known as Civil Lines, and generally lay between the military cantonment and the old city. Within these two settlement areas could thus be found all the visible symbols and peculiarities of the new ruling class, and the administrative functions of the old city were superseded by the new settlements. The old city thus lost its importance, though it continued to function in other ways, but always as an adjunct to the cantonment and civil lines.

Though the cantonments were away from the town, they were near enough for the troops to rush out to quell any disturbances within the town if necessary. The cantonments were generally regarded as unique solutions to the problems of defence in a colonial situation. However, apart from the military needs, they also evolved into a special kind of suburb, following a pattern of development quite new to the host culture.

The cantonments began to become a part of the Indian scene mainly from the last quarter of the 18th century. At this time, Wellesley's Subsidiary Alliance system spread the British Indian army across a large part of the country, including the territories of the Indian princes. The early encampments were in reality semi-permanent camps with most of the troops quartered in formations in strictly echeloned lines under tents. Even when tents gave way to permanent structures of brick and stone, the general atmosphere of a military camp remained. By mid-19th century, they contained most of what was required for a town in those days, but everything had a military purpose, in so much as it was all meant to cater to

the needs of the troops and officers.   There were bazaars for daily supplies, clubs, messes, theatres, bachelor and married dwelling houses, play grounds, churches and schools.

The military reason for the establishment of cantonments became less important after the middle of the 19th century.   By then, British suzerainty had been firmly established and the 1857 upheaval had been crushed.   After this more European troops were imported into India, and consequently the area of the cantonments had to be increased.   Moreover, in 1863 a Royal Commission was set up to study the condition of the British Indian Army and suggest improvements.   The high rate of deaths among the European troops as well as the high incidence of disease, seriously worried the authorities.   The Commission made a number of suggestions which were incorporated into the general rules regarding the regulation of cantonments and were acted upon in the later years.

Most of the recommendations were based on new theories of health and hygiene which had become popular in the mother country.   In England, these new theories and improved technology following the industrial revolution which had caused profound changes in the life styles of urban areas.   A fall in the death rate, a higher life expectancy, a certain amount of disease control, as well as improved amenities like lighting, water supply and transport, had greatly altered the quality of town life.

A.D. King has studied the 'new' 'scientific' theories and psychological reasons responsible for the location and spatial arrangements of cantonments in India.   An examination of the three cantonments at Colaba, Ahmednagar and Poona according to his terms gives us an interesting insight into their development.   Though primarily such settlements were created for military reasons, they evolved into a suburban pattern and became "a system of built forms and spatial arrangements organised by a particular culture for a particular purpose and at a particular time".   (*King, 1976, p. 97*).   That is, the colonial community settled in these areas modified their environment according to their culture— specific ideas and criteria.   These were based on their special perception of beauty, and their understanding at the time, of new theories of health and hygiene. These criteria influenced the location, lay-outs and spatial distribution, as well as the architectural forms within the cantonments.

For example, the aesthetic and psychological values of the 19th century Europeans influenced the physical look of these cantonments.   They took pleasure in open areas and large compounds, which were modified to look like English gardens of the time, providing the kind of scenic beauty they used to think as beautiful.   Their gardens were laid out in flower beds (growing varieties of 'English' flowers) and lawns, with creeper covered gateways, paths and even European sculpture.   The 19th century Romantic Movement had imbued them with love for the 'picturesque' scenery which allowed them to regard the distant

view of the Indian town as 'colourful', 'picturesque' or 'interesting' though they avoided actual contact with it. The 19th century ethno-medical theories (now considered unsound) were based on definite ideas of how disease occurred and spread due to 'impurity of air', humidity, lack of elevation above the 'noxious vapours' from the ground, and by olfactory means. These theories played an important part in the location and lay-out of the cantonments, as King has shown. Thus, they were located at a distance from the Indian city away from the windward side. It was felt that noise and smell from the old city would not then affect the health of the camp inhabitants. The distance would also act as a deterrent for soldiers who otherwise frequented the town and picked up diseases and over-indulged in drinking. It was also felt that malarial fever was caused by low elevation, and in the 19th century it was laid down that subject to strategic conditions, cantonments wherever possible should be shifted to higher elevations. Since humidity and the 'vapours' from the ground were understood to cause disease, it also became obligatory to raise all living accommodation, on high plinths above the ground. Moreover the volume of air per person was laid down. This was also racially differentiated. That is, it was believed that the amount of air required for an European was much more than that for an Indian sepoy.

All these ideas had important consequences for the spatial distribution and architectural forms within the cantonments. For example, in the early years of the 19th century, each European soldier was supposed to need 60 to 70 sq. ft. of space, and 600 to 700 cu. ft. of air space. At the end of the century these specifications were raised in keeping with 'newer' theories, and each soldier was given a raised quota of 80 to 100 sq. ft. of physical space and 1000 to 1500 cu.ft. of air space. To keep up with these regulations, the sizes of the European barracks naturally underwent changes. The way they were arranged was also changed. (Now, instead of being in straight lines they were echeloned in a way that would ensure maximum air-circulation).

Since the Indian town was out of bounds, the needs of the soldiers and officers had to be met within the cantonment limits. Thus, approved bazaars, hospitals (separate for Indians and Europeans) and provision stores were set up. Recreational and institutional (both religious and social, needs led to the allocation of space for play grounds for football, cricket, polo etc, for the paddocks for horse-riding and a race-course for racing, racquet and ball courts; gymanasiums, libraries, and not to mention the Parade ground. Clubs, theatres and canteens, shooting ranges, workshops, stables and stores had also to be accommodated. Burial grounds were an important requirement as also churches of various denomination and for separate congregations (Catholic, Protestant, Anglican, Methodist, also separate ones for Indian sepoys and other British ranks, as well as officers). (*King, 1976, pp. 97-122*).

These rules and regulations were laid down in various cantonment manuals, and in the report of the Royal Commission for cantonments set up in 1863. The

most important criterion was to safeguard the health of the European troops and cut down the high mortality rate among them. Each cantonment had a characteristic and common lay out. Accommodation was of three types, for European troops (married and single), European officers (also married and single), and Indian sepoys. More than one unit or regiment could be stationed in a cantonment, but each one had its own barrack square, parade ground, quarter guard, mess and officers' quarters. There was comparatively little regulation of living conditions of the sepoys. The married ones lived in self-constructed huts of bamboo, matting and thatch, arranged in rough order in the Native Lines at a distance from the European troop lines. The huts were small and low with an average of 500 cu. ft. volume of air. It sheltered the sepoy and an often large family. The huts were closely packed together with hardly any provision for drainage. There was almost no sanitary supervision by authorities. (*King, 1976, pp. 120-121*). Bachelor sepoys were put up in one-storeyed temporary constructions, hardly raised from the ground. These long barracks were narrow and had tiled roofs.

In later years, authorities made better attempts to improve the hygiene of Indian troops and camp followers. There are recorded attempts to improve their sanitary arrangements. For example, an experimental privy 'set apart for females' at Sholapur cantonment was tried out. In length 188 ft., breadth 43 ft. and in height 6 ft., it consisted of an earthern embankment in front, a little shorter than the overall length. Behind this embankment was the permanent wall with a foundation, both made of stone and mud, and painted with chunam on both sides. A trench was dug on the inside of the wall, 3 ft deep and 2 ft. 9 inches wide. The space between wall and embankment was covered with a layer of moorum. (*P.W.D. Gen., 1855, Vol. 7, p. 263*). Other types of privies were built at Poona for the Tent Lascars and Gun Lascars at Vanavadi, and for the men of the Sappers by the Engineering Department. Various sketches of these exist in the files. The patterns were changed from time to time following a trial and error method. Finally, the Commanding Officer's suggestion is interesting. He recommended the adoption of the Indian style of privy as found in the medieval city of Bijapur ! (This comprised of two or three steps to ascend a platform in which there was a slit, 9 inches wide and 2 feet long and 3 feet deep, below the surface of the platform). (*P.W.D. Gen., 1856, 33, 1165*).

The barracks for European troops were in the early stages, tents set on raised plinths, but later stone or brick was used. The earliest type of permanent barracks were usually one-storeyed but raised on plinths and laid out in the form of a square facing inwards into it. (*King, 1976, p. 100*). The officers lived in detached bungalows situated within large compounds. Servants quarters, cook houses and stables were also to be found within the compounds. The officers' bungalows were at a safe distance from those of the other ranks.

Thus, the strict hierarchy of rank in the army reflected in the built environ-

ment. The more senior the rank, the fewer the numbers, and the larger the space required. The senior-most officers therefore had very large bungalows with huge compounds often larger than ten acres. Less senior officers had smaller bungalows within smaller compounds. The other ranks lived close together in the barracks.

With this general background, we may now discuss the specific cases of the cantonments in the western Deccan. Three representative ones have been chosen. Poona and Ahmednagar fall within the category of the dual Indo-British pattern, while Colaba cantonment becomes a suburb of the colonial city of Bombay.

IV. A BOMBAY CANTONMENT

Bombay was one of the earliest places on the west coast where English troops belonging to the Bombay Presidency were stationed. In the last quarter of the 17th century we hear of the presence of a number of troops, mostly Indians under European officers, put up in the island. Two 'native' companies of 250 men each were stationed in the Bombay Castle itself, and a similar number of infantry and lancers made up a militia and were deployed in the town. There were about 500 troops at Mahim under an English Captain, while there was a small group in Mazagaon under a Portuguese officer. There was an additional force of 200 local Indians. Thus there were about a total of 2,000 troops in all to guard the small settlement and the Castle. These were mostly concentrated at the Castle and the township, while a small number moved out to the strategic point in Mahim to guard the coast from attacks from the mainland. (*Gazetteer C & I, II, p. 256*). These troops faced the siege on Bombay by the Siddi of Jangira in 1689-90, but not much information is available regarding the living quarters of these troops.

In 1708, we know that a hospital and barracks were built for the troops in the Fort, and these were improved and repaired from time to time. (1763, 1741, 1755). The troops paraded on the Green. At about the same time, quarters were provided for the outposts in Sion, Sewri, Mahim and Worli (*Ibid, p. 261*). But all these did not really constitute cantonment patterns. The troops were there temporarily for strategic and military reasons. But the idea of developing some part of the island as a centre for stationing troops had preoccupied the minds of the English from the very beginning. Gerald Aungier seems to have decided to use the detached island of Colaba as a future cantonment. The island was not included in the marriage treaty by which the English acquired Bombay, therefore Aungier had plans of purchasing it from the owners. (*Douglas, 1893, I, p. 102*).

When the island was finally acquired is not clear, but Parson's account mentions two large barracks for the military already set up in Colaba island. He also mentions temporary camps on the island, presumably under tentage.

By the end of the century, from one account, Colaba seems to have had about 25,000 soldiers and to have become a centre of military operations in the Deccan region (*Sir James Mcintosh, quoted, Ibid, p. 102*). Bishop Heber, in the early 19th century refers to the cantonment as of considerable size, and to the fact that the first church built on the island, presumably for the troops, was consecrated by him. (*Heber, III, 1828, p. 129*). These troops were accommodated in 'huts' which could not have been very impermanent, because they existed for 70 years and were finally replaced in 1890's.

In the early 19th century, temporary huts accommodated most of the troops, but by the middle of the century, the island had taken on the aspect of a proper cantonment. By this time, according to one visitor, the island was filling up with residences of European civil servants and merchants, who hired them from the original Parsee owners. Much of the land seems to have belonged to rich Parsees. By the 1850's also, roads had been properly laid and Henry Moses, could drive through the island to the extreme point where a lighthouse was built, two miles into the sea. A battery was deployed near the lighthouse. The same visitor also mentions that barracks had been constructed for European troops landing from England, and 'Sick Bungalows' for the convalescence of officers of the East India Company and its army. These were situated in special grounds. Drinking was prohibited on the island for troops. There was also a plan to build a lunatic asylum.

The point specially reiterated is that the island was a very healthy place, in which detached residences were situated in surrounding gardens, belonging to English, Parsees and Portuguese owners, (*Moses, 1850, pp. 213-215*).

The cantonment at this time is described by an obviously dissatisfied member of the European community as 'a line of barracks, lofty, and ungainly, some trees, regulation height hedges, the burial ground, and a church which but for its bell might be mistaken for the mess' . . . He goes on to give a critical description of the bungalows of officers as being long and low, with thatched roofs, raised only a few inches above the burning soil, at equal distance from each other. They stood within small enclosures built of mud, with the stable at one end, and servant's quarters at the other. The 'overall picture created is that of a big-size "wigwam" surrounded by mud walls, a straight road leading to a green door with a yellow "screen" suspended before it'. In this dwelling, the 'largest amount of heat and the smallest quantity of light are secured' to the hapless residents (*by 'Friend of India', Bombay Builder May 5, 1866, Vol, I, p. 228*).

This description differs significantly from that of Moses, and of Bishop Heber, both of whom emphasized the health aspects and natural beauty of the area. (*Heber, 1828, III, p. 729*).

By mid 19th century the Colaba cantonment was acquiring the suburban pattern of the other cantonments of India. It had considerable troops, a church,

barracks of the old type, roads, officers' quarters in spacious compounds, and a sprinkling of civilians, who had moved out of congested Bombay into the more spacious cantonment.

The regulations regarding alcoholic drinks etc. were already in operation. It seems that the island was the ideal location for a cantonment, as it fulfilled all the criteria governing the selection of such a site. It was strategically important, being close enough to guard the town of Bombay, or for mobilization of military operations on the mainland. An added point in its favour was the fact that it was the first port of call for European troopships which made it possible for troops to land at Bombay and be quartered in the cantonment. It was also, far enough from the Indian bazaar, specially as it was cut off from the mainland which could only be reached by ferry service when the tides were favourable. It was also found to adequately fulfil the 19th century ethno-medical theories. The balmy sea breeze and open areas were thought to make it specially healthy and convalescence homes continued to be set up for officers.

Perhaps for all these reasons, even at the end of the 19th century we find the authorities improving and remodelling the cantonment as a permanent station for troops, even though no immediate military reasons existed for this.

In 1856 the annual report of the Deputy Inspector General of Hospitals stated the concern of the authorities about the Colaba barracks, whose situation they found low and damp. They criticised the ventilation and felt that the latrines and urinals were on the wrong side. They recommended that new barracks should be built on the new pattern. They should be raised on high plinths above the 'unhealthy' ground. There was an urgent need for these new barracks because Colaba had grown into a depot for invalids from all over the Presidency (*P.W.D. Gen,, 8. A, 1265*). The barracks for Europeans were supplied at this time, with hand-drawn ceiling 'punkhahs' and 'khuskhus' screens to cool the temperature within. (*Ibid*).

At this time too, an interesting correspondence took place between the government and civil architect, regarding the building of new barracks at Colaba. Land had already become expensive here and it was proposed that certain properties at the northern end should be bought from the owners for the purpose of constructing three barracks for five hundred men on the regular pattern. A novel plan to save space was debated. This plan comprised of a three-storey barrack for the men. The ground floor was to be used as a mess, the first floor for accommodation of married couples, and the second floor for bachelors. Kitchens, washrooms etc., were to be in detached buildings. The length of this huge structure was proposed to be 1,248 ft. This would save 352 ft. in length of ground, as the old pattern of barracks was 1,600 ft. long. The new pattern would also save money. Cost comparisons were called for, and much controversy took

place regarding the amount saved as weighed against the inconvenience of putting married and single men into one building. However, no structures were built in Bombay on this pattern, and the authorities stuck to the regular plans. (*P.W.D. Gen. No. 8. of 1856, file 1068*).

In the 1890's the seventy year old huts were pulled down and barracks were built on the new pattern. Instead of very long low structures, blocks of smaller size were constructed. These were however, double storeyed and raised on high plinths as recommended. They were made of blue basalt so abundant in the Deccan and covered with sloping tiled roofs. Walls were protected by deep verandahs on both floors and in front and behind the block. The main door was reached by a flight of steps, and led to a room used by the men for relaxation, reading etc. (day room). On either side of this, extending the whole length of the building, were dormitories entered through doors on the verandah. These had large windows, and ventilators on the upper walls near the ceiling. Behind the day room were two sets of rooms for sergeants' quarters. These included a sitting room, a large bedroom and a lavatory. The entrance to these was from the back verandah. At either end of the building, staircases led to the upper floor, which was exactly the same as the ground floor on plan.

Three main blocks, North Flank Barracks, South Flank Barracks and Artillery Barracks were built on the same plan at the end of the 19th century.

At this time, in the wider part of the promontory of the island, there was a parade ground and officers' quarters. One European infantry regiment and two artillery batteries, (also European) were always stationed in Bombay.

Thus, Colaba developed into a full fledged cantonment, conforming in its basic features to similar settlements all over India. Apart from its military functions, space on the island was also found for a number of private dwellings, belonging to the civilian population. Thus the wealthy indigenous merchants, as well as European civilians, bought property on the island. It is obvious that they did so, because they found the area cleaner, healthier and less congested than the main island and the walled town. Those who acquired property in Colaba were thus following the general trend on the main island. (*See above Chapter III, B and C*). The island of Colaba took on the aspect of a suburb of the walled city. This development was further accelerated when the Colaba Causeway was built connecting the island of Colaba to the main island.

IV B AHMEDNAGAR

Ahmednagar was taken from the Marathas by the British in early 19th century. The choice of place for the stationing of the first troops by the British was obviously the old Indian fort at Ahmednagar. This medieval structure was built in the 14th century and had been repaired, renovated and strengthened from

time to time. General Wellesley, its conqueror, had admired the fort and had thought it the strongest he had seen in India. British troops took over the structure and adapted it to their own use. The basic structure was not changed, but new constructions were raised from time to time inside the fort to accommodate the changing needs of the 19th century army. New store rooms, and offices, barracks and ordnance depots, workshops and gun sheds were raised—but these were not basic alterations.

The fort continued to be used by the army as well as by the civil government for various purposes throughout the 19th century, as it still is today. (*Gazetteer, Ahmednagar, 1884, 17, pp. 693-96*).

However, the growing number of troops in the area soon necessitated the building up of a regular cantonment outside the fort. The area round the fort was a wooded plain, rising slightly to the east, with the broad but shallow Bhingar stream running through it. It was particularly suited to the specific requirements of the suburban cantonment patterns.

The cantonment grew up around, or circling the old fort, and stretched to a distance of half to three-quarter miles in the late 19th century. From the map it would be seen that the main concentration of habitations and structures was to the east and north-east of the cantonment bazaar. (Sadar Bazaar is the name generally applied to these bazaars all over India, and they are regulated by cantonment rules). To the south-east were the infantry barracks with the officers' houses behind them. Even further to the south were artillery barracks, built in the last quarter of the 19th century.

To the west of the old walled city of Ahmednagar, huddling near its walls, and quite far from the European troops, were the Tent Pitcher's lines. To the north-west on the other side of the parade ground, were the lines of the Native Infantry Regiment. Quite far to the north were some more officers' quarters and a recreational ground called St. James' Garden.

The map also shows, a smaller settlement called Simpson Market, beyond which is the Police Lines—perhaps falling outside the official cantonment limits.

Obviously more than one army unit was stationed here. One account gives the figures as one artillery battery, four companies of European infantry and one regiment of Indian infantry. The census of 1881 shows 4,589 people. (*Gazetteer, Ahmednagar, 1884; 17, pp. 689-693*).

In 1856, a committee was set up to determine the need for alterations to European artillery barracks, which were apparently of the old pattern. The washrooms and urinals were inside the buildings, and the barracks formed a double row; separated by a centre street of 63 ft. width. The space between the

barracks was only 48 ft.   The committee proposed that the washrooms and urinals should be removed to the end of the verandah, and the latter protected by a screen wall.   The floors of both were to be sunk below the barracks and the roof opened with ventilators. This would make them less offensive. The idea of having detached washrooms, was abandoned as it would obstruct the free circulation of air around the barracks.   *(P.W.D. Gen.; Vol. 8A, of 1856, File 127).*

The European troops' barracks for the infantry companies, consisted of three blocks of double-storeyed buildings, facing west, conforming to the ethno-medical regulations about wind directions etc. (These buildings were finished in 1873).

The blocks could accommodate forty-four men and two sergeants each. The men were accommodated in two dormitories, 87 ft. 1 × 24 ft. b × 20 ft h. Two sets of rooms, one on the ground floor and the other on the first floor, were earmarked for the sergeants.   Each set had two rooms, which measured 18 ft. × 24 ft. taken together, and also had an attached bathroom.

The lower floor of the barracks was used as day-rooms and recreation rooms, and to store equipment. Each block had a washroom, cookroom and a latrine. The walls of structure were protected by 12 ft. wide verandahs running around the whole building.

Thus, these barracks generally conformed to the regulation plan, providing raised amounts of cubic air space and physical space per person, regarded as necessary for the health of the European troops.

The layout of the European regiment also conformed to basic cantonment patterns.   The quarter guard was in front of the barracks and next to it were the gun sheds and harness rooms.   Two blocks of married officers' quarters for eight families (four sets of bungalows) were also situated in front of the barracks. Behind the barracks was a block of quarters for three staff sergeants.   A canteen, a 'fives' court, and a skittle alley are also shown in the map, indicating that recreational activities were encouraged and provided for, in keeping with general ideas of organizing the leisure time of the inhabitants.

The officers' lines were made up of a single row of detached houses in large compounds.

The large parade ground acted as a break which separated the Native Infantry lines from the fort and the European troops lines.   The barracks for the Indian sepoys were built between 1865 to 1870. They consisted of two blocks of thirty-two single-storeyed, tiled buildings. The blocks were divided by a central street, 100 ft. broad. Each block consisting of eight rows of two buildings was

divided by 60 ft. broad streets. Within the blocks, separate rooms were provided at the corners for the Havaldars. They were also large and had a verandah.

On the right was a regimental hospital and a regimental bazaar with fifteen shops.

The tent pitchers and servants were allowed to build a cluster of huts in their own lines at the western edge of the cantonment.

By the end of the 19th century, Ahmednagar cantonment had developed its suburban pattern with broad and tree-lined roads, open spaces, recreational facilities, bazaars and distinctive officers' bungalows. It also conformed to the general pattern of putting the native troops at a distance, between the European parts and the city. The water supply to the area was drawn from the old Bhingar channel built by the Muslims at the east of the cantonment. The western part was supplied by the Khaparwadi channel (also medieval).

By this time, the paraphernalia of the civil administration was also set up. The civil officers lived in bungalows similar to those of the military officers. The cantonment therefore, became the administrative and military centre. Its suburban features were strongly accentuated. Not only did it display the classic cantonment pattern similar to other stations, it also conformed to the features of the 'dual-urban' pattern set up by the British at other places.

The Indian town of great antiquity and with a teeming population was separated by spacious grounds and native troops' settlements, from the European cantonment. The latter developed into a suburb, almost independent of the old city except for its commercial needs. Its function was the administrative and military control of the population in the old town as well as in the cantonment itself. The old city, deprived of its old functions gradually declined in importance and became an adjunct of the newer settlement. (Its importance was somewhat regained after independence when it again became the administrative headquarters of a district).

IV C POONA CANTONMENT

The largest concentration of troops in the Western Deccan area during peacetime was in Poona, although it was the last to be conquered. It was only after the final defeat of the Marathas in 1818, that a formal cantonment with the distinctive suburban pattern grew.

The task of defence, carried on so far by the hill-forts around Poona was now taken on by the military cantonment reflecting the new political realities in the Deccan. The old forts fell into disuse or were destroyed so as to eliminate all

possibility of using them as centres for future rebellion or to remove from the minds of the people the idea of using these as psychological rallying points.

Before the Battle of Kirkee, the subsidiary forces were put up in what can be called the earliest cantonment in an area between the Gymkhana Club (Deccan Gymkhana) and Ganeshkhind. This was close enough to the British Resident's house at Sangam (i.e. the confluence of the Mula and Mutha rivers). There also was a small encampment at Garpir.

When the Residency was attacked, Elphinstone who was then the Resident, abandoned the place as indefensible. But, with the final defeat of the Marathas, Poona within a short period became a large administrative centre, and the head-quarters of the Bombay Presidency army. As Dennis Kincaid remarks, "long the seat of Hindu orthodoxy, (Poona) became in an extraordinarily short period the Poona of Anglo-Indian Saga". (*Kincaid, 1973, p. 172*).

Poona had all the attributes required to make it into a proper cantonment, and was therefore the natural choice of the British leaders. For decades it had been the centre of the Maratha Empire. Its location on a plain surrounded by hills gave it a natural protection. The Peshwas had developed a strong communication network with the surrounding areas, so that, he who controlled Poona, could also control the entire area. The Indian city also occupied a special place in the psychology of the indigenous population, which had long considered it the centre of their political, administrative and religious life. Above all, Poona was close enough to Bombay, so that, once a line of communication was established through the Bhor Pass, the Bombay government could establish total control over the Maratha territory, both militarily as well as economically. (*Kosambi, 1981, pp. 190-191*).

Soon after the last battle in 1817, the British troops were stationed in camp formation under tents at Garpir. (*Shakespeare; 1916, pp. 13-14*). Around this grew the cantonment. Grain dealers and traders required to supply the troops put up two rows of thatched huts along what is now Main Street and Taboot Street. This was the beginning of the Sadar Bazaar. About 500 yards to the south-east of this, another bazaar was begun, known today as the Sholapur Bazaar, at about the same time (1818). This was mainly to supply the Madras Pioneer Groups which were put up near that area, and consisted of native troops. The traders were mostly Bohras, Parsis, Mehman Muslims, etc. (*Gazetteer Poona, 1884, III, p. 357*).

Within a few years the Sadar Bazaar developed into a small town populated by Indians. Most of its residents earned their livelihood by catering to the European residents and to the military establishments. By the end of the century there were more than 2,400 houses and 700 shops. The main road was broad, and

other roads were also much broader compared to the older Indian town. Trees lined the roads and there were paved gutters, broad footpaths and kerosine lamps to light the roads. The houses in the bazaar, owned by Indians, were of varying shapes and sizes, and mostly with Indian type of facades—plain walls, overhanging balconies, sometimes three or four storeyed, with richly carved doors and corbelled balconies. Houses put up a little later became a hybrid mixture of European and Indian elements. Glass panelled shutters, sloping tiled roofs, dormer windows, Tuscan or Corinthian pilasters and columns were juxtaposed with profuse carving and courtyard type planning. Opening on to the street, the shops had residential accommodation above, and often rose to two, three or four storeys. From the rooftops there was an unbroken vista of tiled roofing closely packed together. Today, with the old houses being rapidly broken down and concrete ones being built in the universal 'International' style, the area is in a state of confusion;—high rise structures jostling with the remnants of the older buildings which though not being grand architecture, at least gave the street a personality.

There were eight streets of varying width and shops along these streets catered to the European and Eurasian population. They were strictly supervised by the cantonment authorities regarding the quality of their merchandise.

In 1825, when Bishop Heber visited Poona, he found that the beginnings of the cantonment were well laid already. There were wide streets and a well-arranged cantonment with a library, regimental school, and a church (St. Mary's) which he consecrated. Lady West came to Poona at about the same time. She recorded her stay in the bungalow of a Capt. James, which was a "very pretty 'English' house with a nice garden". (*Drewitt, 1907, p. 90*). Presumably the army officers' bungalows had already been set up in customary spacious surroundings in the typical cantonment lay out within six years of the conquest. She also found the old Indian city falling into decay and Shanwarwada in a miserable condition. (*Kincaid, 1973, p. 172*).

Obviously the Indian town was given a wide berth while the cantonment was developing as a new seat of colonial power. Lying to the east of the old city its boundaries included the villages of Ghorpadi, Vanavadi, Mali and Manjeri. The land was taken under the direct control of the government and property owners were compensated. The eastern boundary was the Bhairoba's Nala. (*Gazetteer, Poona, 1885, III, pp. 357-358*).

By the end of the century, the cantonment had spread to extend over 4-1/4 sq. miles, with an approximate population of over 30,000 people. On the south it stretched to the Satara Road, and on the north-west to the Council Hall Road, which separates it even today from the municipality.

Immediately beyond this, between the city and the cantonment, was the suburban municipality area, and the Civil Lines. Public buildings like the Coun-

cil Hall, the Records Office, Commissioner's House, Post Office, Pay Offices, Collector's Office, Traveller's Bungalow and a hospital all came up in this area. Close to this, in the area called Garpir, a new British Residency was said to have been built in 1819. (The old Residency at Sangam was destroyed during the war with the Peshwa). This house was given to the Deccan Commissioner who became the head of the administration in Poona after the war. It existed till 1863, when it was destroyed by fire, and a Gothic church was built on the site. (*Shakespeare, 1916, p. 25*). Most of the public buildings were constructed after 1860 and coincided with the period of high tectonic activity in Bombay.

The cantonment area was roughly divided into three, military, bazaar and civil or 'bungalow' area. The military area displayed the characteristic spatial pattern of other cantonments. The troops were located at strategic points guarding entry into Poona. The entry from the Ahmednagar side was guarded by the troops in their barracks at Ghorpadi; the Satara and Sholapur Road was supervised by the troops at Vanavadi (*Shakespeare, 1916, p. 36*). The necessities of the troops were supplied by the three regimental bazaars. Sholapur Bazaar, Vanavadi Bazaar, and Ghorpadi Bazaar—all set up under the strict supervision of the military authorities. The two Indian regiments, infantry and cavalry were camped at two extreme ends, far away from the European soldiers' lines, and the officers' quarters.

About 130 acres of land, comprising the central belt was left bare to be use as parade ground and for other military necessities. The race-course was included in this area.

The administration of the cantonment was entrusted to a cantonment committee, which was headed by a magistrate. He also acted as the Municipal Commissioner. (*Gazetteer, Poona, 1885, III, p. 355*). In 1884, the Suburban Municipality was established, when the civil lines had become much extended and crowded. The cantonment was subject to various laws passed by the Government of India from time to time, to regulate all the cantonments in India. (The Cantonment Act, 1889; Cantonment Code 1899; Cantonment House Accommodation Act, 1902 etc.)

A church (St. Mary's) and Commissariat and Transport buildings were also constructed for the use of the garrison. A hospital for European troops at Vanavadi, and separate hospitals for the Indian regiments, completed the picture. The European officers' bungalows, both civil and military, were mainly clustered in the Ghorpadi and Vanavadi areas and in the Right Flank Lines, Neutral Lines and Staff Lines. The whole area was shaded by trees, with good roads and riding paths. The bungalows have been described as standing enclosures of half to two acres, fenced with brick walls or cactus hedges. Many of these were owned by Indians and hired out to Europeans.

The Ordnance Lines had two rows of small houses in small compounds, in which European retired pensioners could live at a low rent.

According to one estimate, the nine lines within the cantonment limits held about 980 Europeans and about 3470 servants of Goanese, Musalman and Hindu lineage. This clearly reflects the comfortable lifestyle of the military and civil officers of the colonial community.

As regards the barracks, which were built over the years (1842, '49, '82) at Ghorpadi and at Vanavadi (1861-72), they also conformed to the general rules laid down by the authorities.

The earliest set of barracks, built at Ghorpadi in 1842, included twelve separate buildings, each containing one barrack room ($97' \times 24' \times 12'$) to hold 22 men; with one set of sergeants' quarters at the end. These were one-storeyed buildings, and the sergeants' quarter had two rooms, each $11\frac{1}{2}' \times 11\frac{1}{2}'$. The whole structure was protected by an 8' wide open verandah. A set of four blocks of 20 quarters each were also made in 1842 for married soldiers.

Even though they (barracks) were built before the Royal Commission's recommendation became the rule (1863) they were quite spacious. In 1856, the P.W.D. made some improvements at the Ghorpadi barracks showing its concern for the health of the troops. Cesspools were removed to a greater distance from the barrack rooms. The women and children were to be given more spacious quarters, as it was felt that disease originated among them faster. (*P.W.D. Gen. Vol. 'A', File 1265*).

In 1849, there were other sets of barracks built in varying sizes. (One gets the impression that a 'trial and error' method was being followed). Twelve blocks with barrack rooms ($113' \times 24' \times 18'$) to hold 26 men, with sergeants' quarters ($11\frac{1}{2}' \times 24'$) and verandah (12' 6" wide) were made. The verandah had a dwarf wall, venetian shutters and glazed windows, thus becoming enclosed. This set was to be longer and higher, though of the same width. The enclosed verandah was possibly an experiment to see if it could be utilized as additional space, as well as do its work of keeping out the sun and cooling the walls. The barracks were built of stone, found in the locality and had thick walls.

The last group of barracks at Ghorpadi were built in 1880 following the latest rules about sanitation etc. Six blocks were constructed. The barrack rooms were $166' \times 25' \times 20'$ and sergeants' quarters of two rooms, bathroom and separate entrance at the end were provided. The buildings had high plinths, floors paved with cut stone and sloping tiled roofs. Along the ridge of the roof were openings for ventilation, covered inside by wire netting, and protected outside by a metal shield. Additional ventilation and light was provided by clear-story windows, and revolving fanlights over doors. Ceilings were planked with teakwood. Space allowed for each man was 2400 cu. ft. and 120 sq. ft. floor space—much more than even the optimistic commission recommendations,

Lavatories, and latrines with the 'latest' (1883) sanitary fittings were placed in detached outhouses.

Barracks at Vanavadi also made to house the European soldiers were a little different. The older blocks, built in 1861 were eight in number and were made of brick and lime plaster, each to hold 60 men and 2 sergeants. They were double-storeyed blocks and had on each floor, one barrack room (109′×25′×18′) and one sergeant's quarter of 2 rooms each (12′×13′). Both floors had enclosed varandahs, (11′ wide) with glazed windows and venetian blinds, like the Ghorpadi blocks. The barrack rooms were entered from these verandahs through arched openings on their longer sides. Roofs were supported by wooden frames. The roof was generally double, as in many bungalows. Country tiles, placed in two double rows covered the roof, while a planked ceiling inside protected the building from heat.

In 1872, six more blocks were built here, with the latest specifications. They were double-storeyed, of stone masonry and surrounded by verandahs on both storeys. The lower verandah had masonry arches, while the upper one had posts supporting the roof. The barrack rooms on each floor were 87′×24′×18′, two (rooms) to a floor, on either side of the sergeants' quarters, which were in the centre. (The plan was similar to the barracks built on Colaba island, Bombay). The new blocks had washrooms, cookrooms and latrines outside the buildings as per standard plans.

Staff sergeants' quarters and quarters for 80 married men were also build at the time; prison cells, guardrooms, a European hospital, a hospital for females, staff quarters for the medical staff, workshops, stores, canteen, Mess halls, and a ball court and a skittle alley were also constructed at about the same time.

Thus, the Poona camp developed a considerable sprawl, forming almost a new township. This extended suburb included the civil lines situated between itself and the old city. However, though much more sprawling than Colaba or Ahmednagar, Poona had the characteristic spatial patterns of cantonments all over India.

Another cantonment was set up at Kirkee on the small flat plain, bounded on its north-eastern side by the Mula river, in 1822. Its area was about 2709 acres. At first, it was a cavalry cantonment, but later it became the centre for other troops. The Sapper regiment had moved to Kirkee in 1882 and it became the headquarters of the Bombay Sappers and Miners. One battery of horse artillery, and one European infantry regiment were also stationed there. Powder works, small arms and ammunition and various other workshops related to military use were put up. A bazaar under cantonment regulations was started as early as 1822, when the European cavalry regiment was there (4th Light Dragoons). By 1885, there were over 30 bungalows, with compounds, belonging to

Indians, and rented by military officers. The troops had been housed in three old single-storyed barracks and a hospital of six wards with 90 beds had been built in 1830.

The guns of the artillery and the horses of the riding school were housed in tile-roofed, and iron-roofed sheds and stables.

In 1870-71, seven blocks of barracks were built on the regulation plans—double-storeyed, stone-built, each with room for 46 men, with *cookrooms* and latrines housed outside, as per new regulations. There also was a parade ground, tree-shaded roads, churches, canteen, messes and a library and gymnasium—thus completing the picture of a small scale cantonment suburb.

To sum up, we have examined in detail three cantonments. All three were important military centres and served in the beginning a strategic purpose. Ahmednagar was established at the end of the 18th century, Poona in the 19th century, and Bombay was an older cantonment, but its growth and development took place really in the 19th century. Reasons for growth were increase in the number of troops, and larger administrative importance. Gradually, civilians, both Indian and European moved into them due to the spacious surroundings.

The cantonments soon developed suburban characteristics and became self-sufficient as regards their daily necessities and recreational facilities. All three were at a distance from the main city, and developed new spatial patterns. This contrasted specially with the Indian cities, so much so, that visitors described Poona as 'two cities in one' as far removed from each other as the north and south poles'. (*Elwin, 1911, p. 2*). This duality gradually led to the decrease in the functions of the old city, while these functions were usurped by the cantonments and Civil Lines.

The patterns of all three, conformed to the general pattern of cantonment suburbs all over India, except for minor varieties of topography, scenery and types of residential structures.

BOMBAY FORTIFICATIONS

It is evident from all accounts that the island of Bombay was not considered an important place by the Portuguese. Either they had not realised its potential, or they had found the difficulties of developing the island too great to be worth the effort. The fact remains that when the English took over the island they found its defences totally inadequate.

The Portuguese concentrated on the surrounding areas instead. By the middle of the 16th century they had built up a network of defensive positions in the region around Bombay. They had strong forts of varying sizes, while some were mere watch-towers or stockaded posts. They were spread over areas as far ranging as Bassein, Asheri and as close as Mahim and Bandra. Their religious houses were also often fortified. Most of these posts were later taken over by the English.

When the English took over the island, the main Portuguese structure was the 'four-square' house of the 'Lady of the Manor', Donna Ignes de Miranda, which stood on the south-eastern part of the island, facing the harbour. This structure could hardly be called a fort as it seems only to have had one small bastion or raised square platform of about 'ten walking spaces'. It had two brass guns. (Antonio Bocarro's account was one of the earliest, written in 1634. Quoted in Gazetteer, C & I, 1910, I). However, the new British owners foresaw a very different role for their acquisition and promptly set about improving it and making it secure from attack by its military neighbours.

Sir Humphery Cooke took over Bombay in 1663. Resources were very limited and so he made use of the old Portuguese Manor House and its surrounding garden to build the nucleus of a castle. By the end of 1665 the small settlement had managed to complete the defences towards the sea. Near the house, on the seaward side, Cooke built a large platform, possibly of stone, which

would 'last for many hundred years'. This platform could take eighteen large pieces of ordnance.

To the landward side, also an attempt was made to put up a wall. This wall was made of turf and logs of coconut trees. Cooke wrote to the King of England about his plans to save the King's money—"It is all done with turffe and cocernutt trees, fourteen foote hygh round . . . . . This worke would have cost His Majesty 5000 1, to have concluded it, but I hope it will not cost him 100 1, for I have taken care to have all the islanders to work by turnes" . . . . (Sic) (*Quoted in Sandes, 1933, I, pp. 15-16*).

Cooke also sent a sketch to the King of the proposed defensive plans, a "ruff draught" as he called it. We can get a general idea of the look of the place from the undated 'Plan of Bombaim'. It shows the original house with fortified walls and stockaded area with bastions which are called forts and separately named, in the sketch. There is a sketch of a banquet house and a fresh water pond at the northern end. The sea-shore lay close by the house, and skirted the eastern side.

The first Chief Engineer was appointed by the East India Company when it took over the island from the King. This was a Captain Smith whose main task was to improve the defences. He laid the foundations of the bulwark 10 ft. wide and 6 ft. deep. By early 1669 these had been completed upto ground level. By May they were near 12 ft. above ground and were finally faced with stone by the end of the year. (*Sandes, 1933, I, p. 7*).

The protective arrangements for the infant settlement carried on through the governorship of George Oxenden, and during the term of office of Gerald Aungier. By this time the castle had been shaped into a quadrangular fort, of which three points commanded the port. The fourth side looked towards the land approaches to the castle. There were obvious flaws in the original defences, as is evident by the complaint made by Aungier himself, that the small circumference and irregularity of the walls was due to the ignorance of the engineers. (*Pusalkar and Dighe, 1949, pp. 57*). Even Capt. Alexander Hamilton criticised the situation of the fort, and said that it should have been built more to the south about 500 paces' on Mendham's point, which would have definitely improved its strategic position. (*Quoted in Forrest; 1902, pp. 1-3*).

During Aungier's time, walls, bastions, hornwork and embrasures were completed. The wall towards the land was made substantially larger than the previous one. It was raised 27 ft. high and 25 ft. broad and consisted of an outer and inner work of stone and a terreplein of earth. The two seaward platforms were 20 ft. high and 42 ft. broad to carry thirty-six pieces of ordnance. Three bastions were finished by Aungier and mounted with guns, while the seaward

bastion was still incomplete. Aungier had also planned substantial powder rooms.

He tried to repair the mistake made by the previous builders of the fort, who had then broken the rocks which kept off the violence of the sea from the smaller bay to the north of the Castle. He had more stones cast to keep off the sea secure the ships. (*Aungier, quoted in Pusalkar and Dighe, 1949, p. 57*).

The outposts at the different points of the island as maintained by the Portuguese were also inadequate. So during the time of Aungier, several small forts were begun or repaired and mounted with cannon—at Mazagaon, Sion, Sewri, Mahim, and Worli (*Anderson, 1856, p. 124*). The Mahim and Sion forts were also improved by Keigwin during the year that his rebellion lasted (1683-84).

Thus, the early defences of the island centred around the Castle, which incorporated into it, the earlier house of the Portuguese. It was built to overlook the main port, and also the smaller bay to the north. Thus enemy approaches from the sea could be easily prevented and the shipping in the port protected. On the landward side, one angle of the tetragon, could command the plains around the fort. It was so positioned, as to have its two points command the sea as well as the plain and the town growing on it.

As the fortifications came up, the garrison was increased, dockyards and quay built near the castle, and warehouses and a customs house put up.

In the 18th century, we find the defences much changed. This was the result of the political situation. The death of Aurangzeb in 1707 made the whole Deccan region politically even more unstable. The English feared attacks on Bombay not only from the Siddis who were owners of Jangira, but also from the Maratha power and the Mughal armies. Throughout the 18th century therefore, the English were engaged in repairing, rebuilding, and generally improving the defences.

By 1718, the town was growing into a trading centre. It now became necessary to safeguard its inhabitants, so the government began to build a wall surrounding the entire town. This early wall was not very substantial, and was later, gradually strengthened. To Charles Boone (1715-1722) goes the credit of this. It was from then that the name 'Fort' was supplied to this extended area of the town within the enclosing walls. Three gates led out of the town—Apollo for entry to docks, Church and Bazaar Gate. This wall was built according to a plan previously laid down by Aungier 40 years ago. Aungier's idea had been to make an enclosure from Dongri Hill to Mendham's Point, in a polygonal line of fortification. Though the wall was not substantial and was a poor defence, it had a moral effect on the people of the town. It had eight bastions and enclosed approximately 153 acres. (*Sandes, 1933, I. p. 86*). By 1724, considerable resources had

been expended in the raising and improvement of defences and buildings. The financial position having become correspondingly low, the alarmed authorities sent instructions that no new construction work was to be undertaken without prior permission. They warned to 'prevent anyone in future, diverting our cash designed for trade by laying it out in buildings, we add, that if, hereafter any new buildings be set about without our previous leave from hence, we shall expect the President and Council to reimburse and repay into our cash whatever is expended thereon'. (*Sandes, 1933, I, p. 87*).

In 1739, after the Marathas captured Salsette and Bassein from the Portuguese, the citizens of the town, and specially the Indian merchants subscribed towards the digging of a deep and substantial ditch round the fort. Mr. Archibald Campbell was appointed as overseer of works and Master of Arms to improve the defences. He was a naval engineer. (*Sandes, 1933, I, p. 88*).

During 1744-1761 the Anglo-French wars had their repurcussions in India. Though the hostilities did not directly affect Bombay, the Company did not take any chances. The fortifications were greatly improved. The curtains were faced with stone, and its bastions were raised. The parapets towards the sea were also faced with masonry and brick. Heavy cannons were mounted on the bastions. The buildings in the Castle were made 'bomb proof'.

In 1746, dry ditches were also excavated and the Port defences were made more secure. We get the name of two engineers, Major Mace and Capt. Jacques de Funck who were in charge of these improvements. The bastions and curtain walls were raised and the embrasures reoriented to have more extensive command of the port.

A dam with a sluice gate was also made across the ditch near Apollo Gate to prevent the water in the ditch from escaping in case the main sluice at the angle of Royal bastion was damaged. (*Edwards, 1902, p. 179-180*).

During this time a debate took place as to the merits of having a fort on Dongri Hill. This prominence it was felt was too close to the northern end, and in the event of capture could be used by the enemy to bombard the town. As a precaution against this, the Dongri fort was partially dismantled. (However, this debate was to come up again in later years.) By the end of the Anglo-French wars (1761), Bombay had become an impregnable fortress town. Though still small in scale, its defensive arrangements have been described as very strong. It had magazines and storehouses and the small town (two miles in circumference) was surrounded by the most 'modern' fortifications, which included fosse, drawbridges (closed at night), three large gates and several Sally ports. However. one writer has criticised the arrangements as lacking not only in strength but also in uniformity, attributable to the fact that different engineers had worked on them at different times without a regular plan. (*Forbes, 1834, I, p. 94*).

We know that by 1765, masonry revelins at the Church and Apollo Gates had been raised and redoubts, lunettes and other 'elaborations' of the Vauban system of fortifications were developing, just like in Fort St. George in Madras, and Fort William in Calcutta. By the end of the 18th century, the defences resembled a veritable 'spider's web'. (*Sandes, 1933, I, p. 95*).

The Gates were described by one visitor as fine, handsome and military looking. They were closed at 9 o'clock at night to be opened at gun-fire (daylight) in the morning; and sentries were on guard day and night. Under the huge walls and between the main gates there were two or three sally ports that crossed the moat by narrow foot bridges (*Ibid, 1850, p. 77*).

Only the island of Colaba was not included in the defensive circle. The smaller forts ringing round the main island had been strengthened and they guarded the sea and land approaches effectively. Not a single vessel could approach the island undetected, from the mainland side.

The fortifications of Bombay thus developed rather slowly over the years as the 18th century progressed. Every forward step was generally attributable to instability of political conditions in the area. Apart from this, another factor of importance in the slow progress of Bombay's defence, was the stringent financial control exercised by the Directors of the Company, who were unwilling to divert money from mercantile activities to engineering ones. At every stage, the Governors had to cajole, entreat and persuade them to allow expenditure on fortifications and other necessary building activities. Large numbers of letters from the Company's servants in India to the Directors testify to this fact.

When Charles Boone set up the town walls, the defence expenditure naturally rose. To the Directors this was intolerable and they refused to meet it. A tax had to be levied on the population by the Council in Bombay to raise the money. The Directors, as mentioned earlier, even imposed a ban on all buildings and fortifications for sometime. However, this ban had to be lifted when it became obvious that the town may have to be defended against an attack by the Marathas.

Even during the years of Anglo-French rivalry, the Directors enraged the various Presidents in Bombay by their niggardliness. It was only when President Bouchier wrote indignant protest letters, that Capt. Jacques de Funck was appointed to strengthen the outlying defences.

It was this Jaques de Funck who raised the controversy over Dongri Hill. In his first survey report, he emphasized the weakness of Bombay Castle and the inadequacy of the ditch and town walls. He also felt that there should be a field of fire round the town. Last, but not least, he drew attention to Dongri Hill as the key point of defence for the island. (*Sandes, 1933, I, pp. 90-91*). His plan was to first connect the existing fortifications on this hill to the ramparts near

the Bazaar Gate, and then to improve greatly the fortifications on the hill. He also suggested three drawbridges for the town gates.

Though some work on this plan was carried out, the Directors soon put a stop to further expenditure and superceded de Funck by James Mace.

The new man changed the whole plan about. He felt that money should be spent on improving the landward curtains, bastions and parapets, and on properly protecting the Gates, and specially repairing the weakness towards Bazaar Gate. If Dongri Hill fort was to remain, much money would have to be spent on it to make it impregnable. As, in case it fell into hands of the enemies, they could use it to 'batter the Mandvi bastion and lay the town in ashes'. So either the fort and hill were to be enclosed and brought within the town or the fort as well as the rocky hill were to be destroyed entirely and the ground levelled. Mace's plan envisaged a new wall line from Dongri Hill to Back Bay, i.e. from sea to sea across the island. (*Sandes, 1933, I, pp. 92-93*).

This plan would strategically have been more defensible. It would have isolated the southern part of the island, and made enough room for the growth of the town. Bombay could then also be safely defended on both sides, by a few ships. But of course this scheme required more money, and the Directors finally rejected the plan. So, part of Dongri Fort was dismantled, and a covered approach only built to its small defences.

This debate raged well into the second half of the century, and filled many pages in the files and records of Old Bombay. However, the victory appears to have been that of de Funck's scheme.

In 1768, the final decision was taken to fortify and strengthen Dongri Hill, and the northern part of the town. The old defences were blown up and the foundation stone laid (1770). It was a difficult and expensive operation in as much as of the solid rock had to be removed for the erection of the defences. It turned out to be one of the largest engineering works in Bombay, and the final result was a strong fort on a high eminence, which was also an integral part of the general scheme of defensive fortifications of the island. It made the northern end of the town virtually secure from attack, because, from its height it could devastate the flanks of any attacking force. Fort George (named after George III) completed the task of making Bombay secure from the attacks of its enemies.

we now have a systematic defensive plan for the whole island—the main harbour, which was the heart of the town and the main spring of its commercial prosperity was well guarded by Bombay Castle. The town was protected by its wall and ditch, and the north land approach to the island was guarded by Fort George on Dongri Hill, which was also connected with the

northern part of the town wall near Bazaar Gate. Apart from these main defences, there were the small forts at vantage points around the island—Mazagaon, Sewri, Sion, Worli, and the triple-bastioned fort at Mahim. Together they commanded all sides of the island, and acted as forward guardians. No vessel or army could approach the island from the mainland side without being spotted by the guards on these strategic posts. The English had found these a little more than ill-guarded watch towers, built mainly against pirates by the Portuguese. They made them into adequate forward positions, well able not only to spot the enemy and give advance warning of his coming, but also put up a fight against him, and thus delay his approach to the town.

Of these small forts perched on rock eminences, Sion fort is a good example. It had a combination of scarp and rampart around it. It also had a supply of fresh water inside, and the house within was built of stone, brick and timber. There was an entrance from the west, approached by a broad flight of stairs and flanked by guard rooms. The house had a verandah and a large hall. (*M.S. Mate, "Archeological and Monumental Sources for the History of Bombay", unpublished, 1979*).

The English in Bombay were now well prepared for any hostilities that might break out with the Maratha powers. Of course, these preparations were never really put to the test, as Bombay never saw direct fighting, nor did it go through any siege in the later years. The fortifications differed in certain ways, from the Renaissance system or Vauban. The Renaissance ideal of octagonal or star-shaped plan could not be applied in this case, as it had been done in Madras. This was due probably as much to the terrain as to the organic growth of the town. It would have been difficult to demolish large areas of an already inhabited town to accomplish this. It was not necessary either to do this. The sea protected one side of the town, and the walls curving in a semi-circle defended the landward side. Even without the star shape, however, the fortifications developed the complex system of bastion ravelines, etc. of the Vauban pattern, and the town now looked very much like the Renaissance town of Europe. Also though there were the walls and the ditch, we do not find any mention of glacis, which was also a necessary part of the system.

In his description of the town in mid-19th century a traveller mentions that there was a strong embankment sloping to the esplanade which was meant to give further protection to the walls. (*Moses, 1850, p. 77*). This sounds very much like a glacis but since no other descriptions have come down to us about such an embankment his statement cannot be corroborated.

Being situated on an island, there was obviously no need for a glacis as long as the approach to the island was well guarded. This as has been shown, was successfully accomplished by the outposts of Sion, Sewri, Worli, Mahim and Mazagaon

The Bombay fortifications thus show a considerable amount of ingenuity in their planning and conception. Though the engineers were usually supported by the President and Council, they were continually criticised by the Directors and hampered by lack of funds. They had to work within these limitations, and managed to come up with a conception which though it differed from stipulated tradition of the 'ideal' in certain ways, was nevertheless adequate for the purpose. This seems even more interesting when we stop to consider that these engineers were not generally trained to build forts, but were really experts in gunnery or naval engineering.

CHAPTER SIX

INDIVIDUAL
STRUCTURAL TYPES

INTRODUCTION

The individual structures erected during the 18th and 19th centuries, reflect the same political and economic realities, and the social and tectonic traditions that were evident in the urban pattern. The public buildings which came up before 1860, were, with a few notable exceptions, mainly of an utilitarian character. Money was expended on defensive and commercial arrangements, with the purpose of improving the trade of the Company. Emphasis was not on scale, style or psychological impact. The exceptions to this were the buildings projected and raised during the governorship of Mountstuart Elphinstone, most prominent of which are the Town Hall and the Mint.

Most of the public buildings were designed by military and government architects and supervised by the Public Works Department. A small but a significant number were designed by well-known architects in England. The craftsmen and masons were mainly Indians, though sculptures were frequently imported from studios in London. The contractors and superintending engineers were mostly Indians too.

Another fact to be noted is, that though many of the structures were built by donations of private Indian merchants and princes, the prototype or inspiration remained European. This fact is also true of the schools, hospitals etc., built entirely with private Indian donations, for other Indians to use.

As regards style, we find that they generally followed the fashions prevalent in Europe. Thus with very few exceptions, most of the extant buildings of the

justice was dispensed, and therefore an important symbol of governmental authority was only a solid block, with a pitched roof. The plain structure was only adorned with non descript flat pilasters running up the whole length of the house, and round-arched windows which pierced the walls of both storeys. The house was capacious but utilitarian. The neo-Greek style came to Bombay in the early decades of the 19th century. It is possible that some older houses were renovated and neo-Greek elements added to make them up-to-date.

Another house of this time, known as Admiralty House, shows a similar facade. Also called Hornby House, it stands on Apollo Street. The Recorder's Court sat here till 1824, and then the Supreme Court used the house till 1826, and still later it was known as the Great Western Hotel. (*Vacha, 1962, p. 21*). The building is a rectangular block of three storeys. At the corners, plain pilasters run upto the verandahs of the third storeys. The roof is sloping and tiled. Large windows pierce the facade and have the typical wooden shades or jhilmils. The portico is Greek-Doric, with fluted columns and a heavy entablature. The church next to it is also neo-classical and both must have looked well together as a part of the street facade. (*Photograph, Ibid, p. 149; also pl. 55.*)

During the governorship of Mountstuart Elphinstone the Mint and the Town Hall were projected. Both were in the neo-Classical fashion, and both were built by military engineers.

Major J. Hawkins of the Bombay Engineers was the architect of the Mint, which was built during the years 1824 to 1829. The building is supposed to have cost 16 lakhs of rupees. (*Sandes, 1933, II, p. 306*). The building was planned in a quadrangular form and was situated behind the Town Hall. It had offices on the upper floor, while the rest of the building housed the coining and bullion departments, melting room etc. Considerable renovations and changes have altered the original look, but the Ionic portico gives the structure an imposing appearance.

The Town Hall was a later construction, having been completed in 1833, by Col. Thomas Cowper who began the work in 1824. The architect was obviously influenced by the designs of Stuart and Revett. The plan is simple. The main hall is reached by a very broad and prominent flight of stairs, directly from the road. These are high enough to form a porch below. There are two other porches on the sides. The northern porch--entry leads to a vestibule, and an elliptical staircase and thence to the room above. Through this we can reach the main hall.

The orders inside are Corinthian, while the facade is Greek-Doric. Its massive columns rising to the top are placed close to the thick walls. There are three pedimented 'porticos' on the facade. It is interesting to note that the

original plan had double the number of columns and we can only conjecture as to how the structure would have appeared if all of them had been put to use. (*Bombay Builder, July 1865. p. 5*). The lighting of the staircase, with its oval skylight creates a dim mystery inside, where sculptured figures are displayed. These are of distinguished civil service members and merchant princes—the heroes of a commercial colonial empire—Stephen Babington, John Malcolm, Elphinstone and Bartle Frere; the merchant princes Charles Forbes (south vestibule), Jagannath Shankarsett and Jamshetji Jeejeebhoy are all represented in majestic poses in white marble. The Town Hall is a striking edifice, its mass and its creamy whiteness, standing out in the tropical sun, evocative of the splendid ruins of Greece and the most outstanding example of the neo-Greek style in Bombay. (*See Nilsson, 1968, p. 116-118, for further details*).

VI B GOVERNMENT HOUSES

It seems appropriate to begin the discussion of the individual structural types by looking at the Government Houses in the Bombay Presidency. These houses were at one time or another, the official residences of the various Governors of the Presidency. These officials at the very top of the social scale of the colonial community were also its political leaders. Their official residences, therefore, performed important functions in the political and cultural milieu of the colonial period.

The Governors in Bombay, as in the other Presidencies, led an itinerant existence. They moved along with their families, and often the whole paraphernalia of the government, from town to town, and from season to season mostly in an effort to defeat the climate.

In summer, to escape the heat and congestion of the city area, they moved to the country. Later they went to the hills of Mahabaleshwar, and to escape the driving monsoon rains they set up the government for the season at Poona. Thus, there were no less than six houses, used by the Governors of the Presidency at one time or another.

However, none of these were comparable in size and grandeur to the Government Houses at Calcutta and Madras. The significance of Government Houses as symbols of the growing imperial power does not seem to have played a very important part in the residences in Western India. Here the emphasis seems to have been more on comfort and adaptation to climate, rather than symbolic manifestations of power.

The earliest residence of the Governor at Bombay was within the Castle itself. This was natural in a fledgeling settlement, where the small trading community was not yet safe from external military danger. Gerald Aungier lived in this house, and various descriptions of it have come down to us from the 17th

19th century, which we shall examine, are in the various forms of the neo-Gothic style.

The structures discussed, are representative ones, as a detailed study of each and every building in the western Deccan would be very cumbersome. This study therefore, had to be somewhat restricted. By grouping the various types of structures according to their functions, however, and then attempting a comparative description of their main elements, it has been possible to arrive at a general idea of the principal features of the individual European structures in the area.

VI A. CLASSICAL PATTERNS, TOWN HALL AND MINT

Till the middle of the 19th century, Bombay was little more than a large village, its sloping tiled roofs, scattered among the exuberant tropical greenery. Reproductions of paintings done by travellers of the time, show only roofs of houses, and the sea front. Representations of some of the important buildings, like the customs house, show that government offices, commercial shipping companies, and banks were modestly housed, and scattered.

The unpretentious buildings of the early period, with their round arches, verandahs and columns, had definitely descended from the classical pattern. A large number of arched loggias, arcaded verandahs, Tuscan-Doric columns, but with minimum of ornamentation, were used to create utilitarian structures which were also functional and spacious. The classical patterns were modified to suit both the limited means of the Company and tropical climate of India. In most cases, classical proportions were abandoned to suit the exigencies of utility. So for the sake of practicability, the modified classical patterns became the most common form of building till the neo-Greek phase began in the 1830's (Gavin Stamp has referred to this style as a 'vernacular classicism'—which is an apt description. (Stamp, Birdwood Memorial Lecture, R.S.A.J., May 1981).

It is not known whether the indistinguishable military architects were much exercised over the great theoretical questions about form and structure which were fascinating the European theorists of the time. However, the type of architecture they evolved was both functional and economical. Some of these structures are illustrated in the works of travelling European artists. In one of the reproductions from Grindlay's Indian Scenery' showing a view of Bombay Green around 1811 we get a good idea of such buildings. (*There is a photograph of this painting in the Gazetteer, C & I, 1909, III, p. 297*).

The old Secretariat was double-storeyed and a rectangular block the centre facade of which was articulated by a pediment carried on long pilasters. The theatre, an important symbol of colonial culture and recreation, had a portico with plain Tuscan columns. It had a prominent pediment, and its facade was pierced by a wide arch and rectangular windows. The Sadar Adalat, from where

justice was dispensed, and therefore an important symbol of governmental authority was only a solid block, with a pitched roof. The plain structure was only adorned with non descript flat pilasters running up the whole length of the house, and round-arched windows which pierced the walls of both storeys. The house was capacious but utilitarian. The neo-Greek style came to Bombay in the early decades of the 19th century. It is possible that some older houses were renovated and neo-Greek elements added to make them up-to-date.

Another house of this time, known as Admiralty House, shows a similar facade. Also called Hornby House, it stands on Apollo Street. The Recorder's Court sat here till 1824, and then the Supreme Court used the house till 1826, and still later it was known as the Great Western Hotel. (*Vacha, 1962, p. 21*). The building is a rectangular block of three storeys. At the corners, plain pilasters run upto the verandahs of the third storeys. The roof is sloping and tiled. Large windows pierce the facade and have the typical wooden shades or jhilmils. The portico is Greek-Doric, with fluted columns and a heavy entablature. The church next to it is also neo-classical and both must have looked well together as a part of the street facade. (*Photograph, Ibid, p. 149; also pl. 55.*)

During the governorship of Mountstuart Elphinstone the Mint and the Town Hall were projected. Both were in the neo-Classical fashion, and both were built by military engineers.

Major J. Hawkins of the Bombay Engineers was the architect of the Mint, which was built during the years 1824 to 1829. The building is supposed to have cost 16 lakhs of rupees. (*Sandes, 1933, II, p. 306*). The building was planned in a quadrangular form and was situated behind the Town Hall. It had offices on the upper floor, while the rest of the building housed the coining and bullion departments, melting room etc. Considerable renovations and changes have altered the original look, but the Ionic portico gives the structure an imposing appearance.

The Town Hall was a later construction, having been completed in 1833, by Col. Thomas Cowper who began the work in 1824. The architect was obviously influenced by the designs of Stuart and Revett. The plan is simple. The main hall is reached by a very broad and prominent flight of stairs, directly from the road. These are high enough to form a porch below. There are two other porches on the sides. The northern porch--entry leads to a vestibule, and an elliptical staircase and thence to the room above. Through this we can reach the main hall.

The orders inside are Corinthian, while the facade is Greek-Doric. Its massive columns rising to the top are placed close to the thick walls. There are three pedimented 'porticos' on the facade. It is interesting to note that the

original plan had double the number of columns and we can only conjecture as to how the structure would have appeared if all of them had been put to use. (*Bombay Builder, July 1865. p. 5*). The lighting of the staircase, with its oval skylight creates a dim mystery inside, where sculptured figures are displayed. These are of distinguished civil service members and merchant princes—the heroes of a commercial colonial empire—Stephen Babington, John Malcolm, Elphinstone and Bartle Frere; the merchant princes Charles Forbes (south vestibule), Jagannath Shankarsett and Jamshetji Jeejeebhoy are all represented in majestic poses in white marble. The Town Hall is a striking edifice, its mass and its creamy whiteness, standing out in the tropical sun, evocative of the splendid ruins of Greece and the most outstanding example of the neo-Greek style in Bombay. (*See Nilsson, 1968, p. 116-118, for further details*).

VI B GOVERNMENT HOUSES

It seems appropriate to begin the discussion of the individual structural types by looking at the Government Houses in the Bombay Presidency. These houses were at one time or another, the official residences of the various Governors of the Presidency. These officials at the very top of the social scale of the colonial community were also its political leaders. Their official residences, therefore, performed important functions in the political and cultural milieu of the colonial period.

The Governors in Bombay, as in the other Presidencies, led an itinerant existence. They moved along with their families, and often the whole paraphernalia of the government, from town to town, and from season to season mostly in an effort to defeat the climate.

In summer, to escape the heat and congestion of the city area, they moved to the country. Later they went to the hills of Mahabaleshwar, and to escape the driving monsoon rains they set up the government for the season at Poona. Thus, there were no less than six houses, used by the Governors of the Presidency at one time or another.

However, none of these were comparable in size and grandeur to the Government Houses at Calcutta and Madras. The significance of Government Houses as symbols of the growing imperial power does not seem to have played a very important part in the residences in Western India. Here the emphasis seems to have been more on comfort and adaptation to climate, rather than symbolic manifestations of power.

The earliest residence of the Governor at Bombay was within the Castle itself. This was natural in a fledgeling settlement, where the small trading community was not yet safe from external military danger. Gerald Aungier lived in this house, and various descriptions of it have come down to us from the 17th

century. These are by no means full and detailed, and no drawings have been located which could give a clearer picture.

This house stood beyond the present Town Hall, and between the Mint and the Customs House. Nothing of the original house now stands except the vaulted lower storey. Described by various travellers, (Grose, Ive's and Ovington), it belonged to the Portuguese who built it in the late 16th century, and was known as the Old Manor House, when the English took it over with the island. Hamilton, in 1690, calls it a square house which served the Portuguese as a place of retreat. It was around this, that Cooke built the fort. An old painting by Ovington in 1668 corroborates this, and shows a strong house with its walls extending right to the sea. (*Douglas, 1883, p. 93-95*).

The existing lower storey has massive walls, $7\frac{1}{2}$ ft. (approximately) thick. The roof is barrel-vaulted, and the whole was constructed as a bomb-proof shelter. The stones of the door jambs are clamped together with iron clamps. The vaulted room and a narrow corridor, is lit only by small openings near the ceilings. This is the oldest extant structure in Bombay, and gives the impression of solidity and strength, but no architectural embellishment. A fitting place for an embattled head of a small colonial community to defend himself against external foes.

Around the middle of the 18th century, the Government decided that the Fort House was unsafe, and the Governor moved out to a house outside the Castle. This house was bought by the Government from one John Spencer, and was made into the Governor's residence. It still stands on Apollo Street, and was known as the 'New House' till 1767, and later as the 'Company House'. The Governors of Bombay used this house as a full-time residential town-house. It remained the official residence till 1829, and saw the death of one Governor, (J. Duncan) in 1811. After 1829 it was used as the Secretariat of the Government till 1873, thereafter it was sold. (There is some confusion as to the name of the original owner, which is variously given as Spencer and Whitehall).

What changes and transformations were made in the original house to make it fit for the official residence of the Governor are not known. Neither are the original correspondence and plans available, but the structure as it stands today gives some impression of its original state. It most certainly was an impressively large structure. This aspect is not evident at first glance now, because of its dilapidated appearance and of the accretion of small shacks around its walls. It is a large rectangular construction of brick and plaster. The facade is made up of two square sections, with sloping tiled roofs, and joined together by pillared verandahs on both floors. The pillars of the ground floor loggia are large and set widely apart, supporting the verandah on the upper floor. This has an ornate iron grill which has been placed between the columns, in the same manner as venetian blinds are used in neo-classical buildings of a later period. However, these must have been inserted at a later date.

The windows are wide with venetian shutters. Just below the roof balustrade there is a plaster moulding with a classical motif of metopes and triglyphs, simulating a frieze. The facade is otherwise singularly free of embellishments that were found in other Government Houses built around this time. Any impression on the beholder must have been created more by its mass than by the beauty of its classical orders, ornamentation or proportions. It is not for nothing that Bishop Heber likened it to a "Stadthouse in a Free German State". (*Douglas, 1893, I, p. 221*).

Inside, there is a wooden staircase, wide enough to be quite impressive. A room on the ground floor, now used as office, has an ornate stucco ceiling. In places where the plaster has fallen, thin strips are visible. These were the old Indian bricks, which were very thin, but had a much larger surface than modern bricks.

On the upper floors there are fair-sized rooms. One large room was obviously used as a ballroom. Lord Valentia visited the house at the beginning of the 19th century and found it handsome. However, he felt that the larger rooms were very inconvenient because they had to be used as passages leading to other rooms. *Valentia, 1811, II, p. 168*). Apart from this, the house seemed to be singularly ill-ventilated and ill-lit. In the hot months it must have been uncomfortable for the residents. The iron beams that were seen on the ceiling of the loggia, must have been put in at a later date, as the early construction was of brick and timber.

The inconveniences of the old house during the summer led to the adoption of a hot weather residence for the Governor at Parel. It seems that the house at Parel was used as a country house before this. In the time of Governor Duncan, it was lent to Mr. Mackintosh the Recorder, because the Governor spent the whole year at the Apollo Street house. However, as the Fort area was becoming congested, and the fashion of spending holidays and evenings at houses outside the walls became popular, the Governors also began to follow the custom.

Originally a Jesuit convent, the Parel house was taken over from the Portuguese early in the 18th century. It became a country house for the Governors till 1829, after which date it was used as the permanent residence till 1883. After the death of Lady Fergussen from cholera, the house was given up and later became the premise of the Bombay Bacteriological Laboratory, (Now it is used the Haffkeine Institute).

Governor Hornby (1771-80) first made it a part-time country house. It is mentioned by both Fryer and Grose in their accounts of Bombay. About 6 miles from the city, the road to Parel was lined with villas of Europeans, and it used to be a very pleasant drive. However, it later proved to be an unhealthy area, because it was "too close to a swamp and some groves of coconut trees which shut out the sea breeze".

J. Burnell describes the old church in his account of 1710. At that time it was in ruins, but he points out that the church was built of stone, and made up one side of a square which formed the convent. The convent had a good height with several large rooms and private apartments with balconies, and a broad staircase. (*Burnell, 1967, p. 57*).

The house must have been improved and adapted to make it a residence, by Hornby. The walls of the ruined church, sacristy and staircases were incorporated into the new building. (*Sheppard, S.T., footnote in Ibid.*) Mountstuart Elphinstone added two wings—to the right and left of the original building, about 30 years later. The central part of the house, plainly shows its antecedents. The public rooms are here, and the Banquet Hall on the ground floor is clearly the desecrated chapel. It is of impressive size, being soft in length. Above it, has been built a ballroom of the same size. The walls being bare, Elphinstone redecorated the whole. He wrote of plans for relieving the bare walls of both the halls with neo-classical ornaments in panels, alternating with panels containing paintings on various subjects. (*Bence-Jones, 1973, pp. 90-91*). Furniture of these apartments seems to have been in the latest fashion of the Egyptian pattern of the French Empire Style. (*Ibid, p. 91*). Hung with crystal chandeliers (*Ibid, p. 78*) the reception rooms must have presented the glittering spectacle expected of a Governor's residence on important state occasions.

Beyond the public ball room at the centre which faces the west, are two more rooms used previously as drawing rooms or durbar rooms. The handsome staircase used to have a bust of the Duke of Wellington. A corridor in the south led to steps into the garden.

Both Heber and Valentia were impressed with the lofty public rooms, and the latter called this residence the 'handsomest in the island'. (*Valentia, 1811, III, p. 169*).

The private rooms of the governors must have been in the wings built by Elphinstone. However, the house had its drawbacks as testified by Lady Dufferin who visited it in the winter of 1884. She found it too cold, because as she correctly said the construction was mainly adapted to let in the maximum of cool sea breeze, and for the free circulation of air. The rooms were large, and "walls cut up into arches opening on to large corridors where all the windows are wide open". This naturally made the rooms 'draughty'. She found the four large windows and the three doors of her bedroom rather inconvenient.

In spite of all these inconveniences however, the Parel house, with its massive walls, crenellated parapets and sloping tiled roof, gives an impression of strength and power even today. Its austere walls were broken only by windows set far apart and verandahs. Its height was accentuated by the flagstaff turret raised in 1856.

The house was set in a large park and was lined by a mile-long avenue of magnificent trees. (*Bence-Jones, 1973, pp. 78-79*). In 1856, canvas pavilions with hangings were put up over the terraces of the west front, and modern amenities, in the form of the water-closet was installed at a cost of Rs. 1,500. (*P.W.D., Gen. Vol. 32, of 1856*).

By the last decade of the century, the park also had been incorporated in the growing city, and when Lady Fergussen died, the residence was given up, and the Governors moved to Malabar Point permanently.

The situation of this last of the Governor's houses was a superb choice. The residence was actually a group of bungalows, set up on a small promontory, overlooking the sea. On one side was the sea, and on the other side stretched the shore line of Marine Drive.

Some sort of a cottage existed here as early as 1789, where Governor Medows spent an occasional holiday, but it was Mountstuart Elphinstone who built the bungalow on the site of the old Walkeshwar temple. It seems that there was a tank too, which was later filled up. (*Douglas, 1886, p. 75*). In 1828, J. Malcolm enlarged the residence, but it was not till 1880, when the Parel house was given up, that Malabar Point became the official residence.

The place can hardly be called a palace or even a house, as it is a cluster of houses well spaced out on the small rocky hill. However, it has the advantage of being totally open to the sea breezes, which circulate around the various bungalows, and even in the height of summer, keep the residences cool. (In the monsoons, it is rather impractical, as it would be impossible to go from the dining rooms to the sleeping quarters without getting wet).

The bungalows themselves, have been built at various times, new ones being added as the need for more accommodation arose. They are generally on the colonial bungalow pattern with large rooms and deep verandahs,

The main bungalow containing the public rooms has a sloping tiled roof. It is really one very large and long room, but partitioned by wooden, perforated screens into a hall, dining room and drawing room. The whole house is surrounded by a wide and spacious verandah. This verandah was furnished in such a way that it could be used as a sitting place. (*Dufferin, 1693, p. 214*) A covered passage connected this main bungalow with the one containing the guest apartments. These were also within a double-roofed bungalow at the very tip of the promontory. (*Photograph in Nilsson 1968, pl. 92 a*).

Moucharabya work and the open work lattice screens from Surat make the main bungalow a very pretty one. The screens allow the maximum circulation

of air, so that even when there is a crowd, the place remains cool.   (*Photograph in Nilsson, 1968, pl. 84*).   Though lacking the grandeur of the Government Houses in Calcutta and other places, the residence on Malabar Hill, was probably the most comfortable and charming of the lot, having enough room for expansions and additions as the need arose.

After 1818, when Poona fell into British hands, the Governors became interested in spending time in Poona.   Apart from the fact that the Governor's presence in the newly acquired territories for a part of the year, was politically welcome, the climate of Poona must have been an important factor in determining the choice.   The weather during the rainy season was considered balmy, and later on, when Poona became the Headquarters of the Bombay Presidency Army, it became obligatory for the Governor to spend the monsoon here.

The first residence was at Dapodi, a few miles away from the Kirkee cantonment.   The house chosen by Sir John Malcolm in 1829 belonged to Major Ford, a soldier of fortune, who had been employed by the Peshwa to train his army.   At the Battle of Kirkee he went over to the British side, but died soon afterwards.   His house was bought by the government for Sir J. Malcolm.

The original house had a picturesque setting on the bank of the Pauna river, which is a tributary of the Mula.   The government bought it, together with 71½ acres of land around it.   It was considerably enlarged by the successive governors, and Elphinstone used it regularly, for a part of the year.   It was used till 1865, when the new residence came up at Ganeshkhind and the property was sold for £ 30,000.   Later it seems to have become a brewery and was in ruins by 1930s.   (*Bence-Jones, 1973, p. 129*).

This residence also seems to have been a collection of bungalows.   The main house contained the reception rooms and a large ball-room, about 80 ft. long.   The private apartments were in a separate bungalow, while the offices of the Governor were in a house near the river bank.   Besides these main functional structures, there were quarters for the A.D.C. and the officers of the bodyguard, two bungalows for the Garden Superintendent and head Gardner, stables for horses, sheds for cattle, servants' lines, store rooms etc.   The cost of building all these came to about £ 50,000, while the property cost about £ 11,000.

With its picturesque tower and the river Pauna running at the boundary, the whole setting seems to have been like a large sprawling complex of various types of bungalows.   Obviously, Major Ford's original house could not fully serve the purpose of a Governor's residence.   The main bungalow, was converted into the public rooms, and used for social functions like balls and receptions. Instead of adding to this, the necessary apartments, new houses were constructed.

Three miles from the city of Poona, Sir Bartle Frere projected an impressive house for himself and his successors.

Built between 1864-1871, this was the only fullscale Government House in the Presidency, and was grander than any of the other residences. It stood in the centre of 512 acres of park land. However, before this house could be completed the cotton boom ended abruptly, and therefore the fuller schemes of Frere were cut short. (*Bence-Jones, 1973, p. 313*). In spite of this the house cost as much as £ 175,000. This expenditure was questioned and Frere severely criticised for it. He defended himself ably, but could not live in the house, as it was not complete when he left India in 1867. (*Ibid., p. 132, P.W.D., Misc. Old Series., 16*).

The style of this house is difficult to categorize. It was designed by the architect Trubshawe who was also in charge of the Ramparts Removal Committee. It was built by the government engineer Mr. Howard. It certainly did not conform to the Victorian Gothic of the public buildings constructed at the time in Bombay, and Poona. In fact, it is a mixture of styles, and individual details range from Romanesque arches on the garden front, and Gothic capitals to a flag tower reminiscent of an Italian Campanile.

It is a sprawling structure spread lengthwise 300 ft., north to south. Built of dressed grey stone, it is more like a large-scale bungalow, than a resplendent seat of the Governor of a large province. The grand impact of Government Houses elsewhere is certainly lacking, but there is no doubt that it has a charm of its own.

The front, facing east, is rather plain, with two porte-cocheres. There are entrances to the two main portions of the building—the public rooms and the private apartments of the Governor. These two parts are double-storeyed, and are joined together by a lower central portion. The tower, 100 ft. high surmounts the north wing, carrying the flag-staff.

Arches along the front are wide, and round, and the storm-water outlets for the roof are in the shape of animal heads. All along the front, spaced at regular intervals are the coat of arms of the various governors of Bombay.

The roofs of the porte-cocheres have balustraded terraces. The stone balusters are shaped like the elongated urns of terracota and cement plaster commonly seen in other buildings.

There is an ornamental garden in front. The tower, carrying the water tank is topped by a wrought iron, ornamental 'dome', with a flag staff.

The house on the whole creates an impression of the picturesque. Though very few Gothic features are identifiable, the totality of the structure is reminiscent of Italian medieval residences. This impression is further strengthened by the tower, dominating the building. So even though Frere departs from the fashionable trend of Victorian neo-Gothic for his monsoon residence, a picturesque impression is created. (The house is comparable to the ones found in the Levant, and along the Adriatic coast).

The west facade is quite different from the east front. Here, the fenestration and arcading gives the whole facade a lighter look. The arches are round. The garden entrance is arched and surmounted by a pediment. All the arches are labelled. The long facade on this side, is broken by a covered verandah with a terrace roof and three projections which house staircases. These were probably added at a later date. The staircases lead up to toilets and were originally spiral, and made of iron for the use of sweepers. Italianate ornaments include corbel tables, mouldings, a projection over a staircase door supported by curved brackets, and even a small aedicule on a staircase window. Two urns at the entrance emphasize the Italian touch. It is an adequate background for the terraced garden before it.

A special feature of the house, is the space meant for indoor garden or conservatory. This is incorporated in the ground floor, behind the dining room and next to the ballroom. It faces the terraced garden at the west, which can be reached through a series of arches on pink scagliola columns. This has been variously described as "flower gallery", or "winter garden", and is an appropriate feature in the monsoon residence. Instead of going out into the garden for a walk, when it rains (which, incidentally is the best season in Poona, for coolness and for growing the European season flowers) the garden is brought indoors!

The inside of the house has to be examined in a detail, because the plan is somewhat novel.

The southern wing is entered through one porte-cochere with an ornamental coffered ceiling. The porch affords guests a safe and dry shelter for alighting from their vehicles. Through a covered lobby one can enter the public rooms. These include a large room, perhaps for conferences of the Council, and the Durbar Hall. This is 80 ft. ×30 ft. and rises to the full height of the wing. It is lighted at the top, by clearstory windows at the first floor level. This impressive reception room is decorated in white and gold, and has a smooth floor, which must have been perfect for dancing.

The dining room, 60 ft. ×30 ft., occupies part of the south and most of the central wing, and is a large apartment lit by arched openings.

The north wing contains the private apartments. Entry is through the simpler porte-cochere, into the covered lobby, with pillars and carved copitals. Then comes a hall, rising to the full height of the wing. At first floor level is a gallery looking over the hall. The hall is lit by an opening in the roof, which is glassed in, and so lets in the light but keeps out the rain. It is like a window in the roof, and on a smaller scale, can be seen in many bungalows. Off this hall to the right, and beyond it are rooms, possibly used as library, private sitting rooms etc. A wooden staircase to the upper storey. The bedrooms, are off the gallery, and are not very large in size or number. There are in fact only three or four spare bedrooms and about nine rooms in all, on the north and central wings on the first floor. The bedrooms have fine ornamental mantels over fireplaces.

Obviously, these were not enough for a Governor in residence with a large family and guests. Visitors complained about the lack of space in the house, and commented on the fact that it did not look as magnificent as the cost. There was also the inconvenience of dry sanitation as there were no water closets. Toilets were cleaned by sweepers coming up through iron stairways at the back. (*Water closets were installed after the First World War. Bence-Jones, 1973, pp. 131-132*). In spite of these complaints this government house presented a unique convenience. It was in reality two houses in one, joined together by the central portion. The private apartments were really private—i.e. away from the public rooms, while at the same time, they were both in the same building. The sprawling plan, did not cause too much dislocation, because the living areas were compact and cosy. In contrast, the magnificent government house in Calcutta created many problems for the Viceroys. The public and private rooms were integrated in the main building, and consequently privacy was sacrificed. Lady Dufferin complained that it had no 'room' in it, though it was gigantic in size. She solved the problem by moving out of the central part, and into one of the visitor's wings where a cosy 'private house' was set up. (*Dufferin, 1893, pp. 9-11*). From this point of view, Ganeshkhind was certainly more comfortable, inspite of its spread ou tplan.

Most of the governors after Frere admired the house, and gradually many other buildiugs were added to the estate—stables, coach-houses, servants' lines, staff quarters on the bungalow pattern, and a guard room in grey stone with a castellated clock tower. These were spread out over the surrounding park area which also included a European barrack for the Governor's band, and the lines of the Governor's Native Cavalry bodyguard of '70 sabres'.

The house was separated from the city and stood in majestic isolation overlooking the flat countryside, at the end of a long drive. The setting was like an English country estate, with its park and terraced garden. The former, was laid out by a Capt. Meliss, in the same way as the parks of the aristocratic mansions in the 19th century England. (Public Consultations, Range 353, 53,

1865). Standing on over 500 acres, it was supposed to be a replica of English landscape gardens.

Standing among the lower hills of the Sahyadri Ranges the Government House was surrounded by a man-made landscape, recalling the features of English country-house parks, evocative of the metropolitan culture of the colonial community and the style of the governing classes in England in the 19th century.

VI C SECRETARIATS AND COUNCIL HALLS—BOMBAY AND POONA

During the governorship of Sir Bartle Frere, a new building was projected to house the administrative offices of the Bombay government.

Before this, smaller structures had housed the Secretariat offices at various times. The picture mentioned earlier of a "View of Bombay Green" (1811) shows the Secretary's office also mentioned earlier. It has a pediment at the centre of the double-storeyed facade, supported by four columns. There is a balustrade hiding the pitched roof, and the moulded entablature is quite plain. Openings are all round-arched with venetian shutters at windows. The three arches of the central part are wider, and look like a verandah, but this is not quite clear from the picture. The columns are plain, and carvings if any, are not visible. Obviously this simple and plain construction belonged to the type generally fashionable in Bombay before the neo-classical revival reached it.

After 1829, when the governors gave up living in it, the 'Company House' on Apollo Street was used as the administrative centre of the Presidency. Being large and spacious, it could be adapted to accommodate Council Halls, Governor's offices etc.

However, the need for a larger Secretariat was felt after the annexation of the Maratha territories which enlarged dramatically the size of the Presidency. It was natural that when Bombay was being adorned with public and private buildings by her citizens at a time of great prosperity, the government should also house itself suitably.

Though the project was first mooted at the time of the share mania, the American Civil War was over and the boom ended before the structure was completed.

Its construction took eight years (1867-74), and was designed by the army engineer, Col. H. St. Clare Wilkins of the Bombay Engineers. The massive pile was completed by Lt. Col. Fuller, of the same regiment, and finally cost over twelve lakhs of rupees. (*Sandes, 1933, II, p. 92*).

The most conspicuous part of the building is of course its long facade of arched verandahs one above the other, broken only at the centre by the porched

entrance and the gabled central part, and the tower. This central part is pierced by a tall arch of shafted windows which rise 90 ft., through the storeys and light up the stair well inside. The tower rises 170 ft. high. Facing the west, the verandah must have been flooded with sunlight in the afternoons creating a problem for those working in the rooms beyond. Part of the facade on either side of the porch recedes inwards, and corbels have been provided for sunshades on these arches.

The plan is an inverted E (|-ı-|). Two wings project east to west at the end of the long frontage. The wings are brought forward at the west, and terminate in three-sided bays. The same feature is repeated the east end. The entire west facade has the arcaded verandahs on all storeys. On the east side too, there are corridors running through the entire length of the building. The entrance is into the vestibule which contains the staircase. The stairs would have been rather dark if not for the long windows which give them enough light. The length of the pile is a little over 443 ft., while the wings are 81 ft. each. (Originally, a much longer structure had been projected—Bombay Builder, I, Feb. 5, 1866). The walls are of rubble and chunam masonry and are faced with Coorla stone set in courses. The upper cornice of the second storey is constructed of an artificial stone—Ransome's Patent Stone, which was manufactured as an experiment for a time in Bombay.

As the style attempted is a polychromatic Gothic of the Venetian variety, many different types and colours of stones are used on arch voussoirs, cornices and capitals. Arch voussoirs of the ground floor are of alternating blue basalt and white Porebunder stone; those of the first floor are red basalt and white Porebunder stone, and so on. The capitals of pillar shafts are mostly of the variety of white stone known as "Hemnagger" stone. Most of the carvings of the capitals, and those at the main entrance are done by Indian craftsmen to the designs supplied by Mr. Molecey and the students of the School of Arts. (*Murray, 1901, p. 7*).

Inside, the Council Hall was the most prominent feature and was 50 ft. long. On the same storey (first) were also the various committee rooms, the private rooms for the governor and the members of the council, and offices of the revenue, finance and general departments. The other floors were given over to different departments, like printing offices, judicial, railway, P.W.D. etc. Thus, the main purpose of the government seems to have to bring all the departments under one roof, and the new building was well suited to this purpose.

The whole pile created an impression of mass, and from the point of view of climate was thought to be well adapted to Bombay weather. Though the west facade became hot in the afternoon in spite of the sunshades, it also allowed the sea-breeze to pass through the building.

However, the long facade, in spite of the polychromatic effect is monotonous, perhaps because of its inordinate length. Again, in spite of its great size, the secretariat is not spacious. Besides the large Council Hall, the other rooms are cramped. All in all it bears comparison with a building used for a similar purpose in Calcutta—the Writer's Building. Though the latter is not in the Gothic style, it has the same monotonous succession of windows, and gives the same impression of mass and uniformity. Many visitors have said unfavourable things about the Secretariat. One writer calls it a "cross between a barrack and a workhouse" (*Mcclean, 1891, p. 195*). Another feels that though the style is imported from Venice, "All beauty has vanished in the transhipment. It is as lacking in sentiment as the work conducted in it and is a complete expression in stone of the spirit of an official architect". (*Forrest, 1903 p. 19*).

The Council Hall at Poona is quite different from the Bombay Secretariat even though it is also a neo-Gothic structure. It is much smaller in size, probably because it was used only as an alternative and that too, only for a few months in the year. It is constructed out of bricks and is rectangular in shape. It was completed in 1870 which makes it contemporary to the larger building in Bombay. It belonged originally to a military officer, Gen. Phayre and was a much smaller structure. The government bought it from the owner and completely renovated it. It was enlarged and changed to such an extent, that the original structure could not be traced anymore. The work was done by Major Meliss, a government engineer and army officer.

The Venetian Gothic style employed in this structure is in no way comparable to the Secretariat in Bombay. It is raised on a plinth of dressed stone, about four feet above the ground. The structure rises two storeys from this plinth, and is covered with a pitched tiled roof. Entrance is through a porch at the west or main facade. Above the porch a square tower rises through three storeys to a height of 76 feet. It ends in a low pitched roof. At the first floor level, there is a row of coloured tiles around the tower. On either side of the central porch tower, the facade extends in a series of round arches between attached pilasters. On the upper floor, the brick arches of the verandah are mullioned in stone. Above the arches, is a corbel table running along the length of the entire facade, and carries a balustrade above it, which hides the tiled roof. Arches on the ground floor are open and plain.

The whole effect is one of lightness. This is heightened by the openings on the tower, which look like an Italian Campanile. A double line of dressed stone divides the two storeys and makes the structure look stronger than it otherwise would have looked. On the northern wall, is a beautiful circular window filled with stained glass depicting the Star of India. (There is a porch at this end, which is probably a later addition, as is the apse like extension to the south wall). The openings on the Council Hall side are larger and higher, and are filled with stained glass. They serve to give more light to large Council Chamber within.

This hall, rises to the full height of two storeys. It has a wooden ceiling decorated with carved bosses. A narrow gallery, supported on iron brackets runs along the wall, and has a beautiful ornamental railing. It was probably used to accommodate visitors or the press at council meetings. On the other side are rooms for the use of the council members. On the upper floor, the rooms were meant for the use of the Governor and his secretary.

The tower also has a room above the porch. The whole structure is rather plain, without carvings or other ornament. All arches are of brick, but mullions are of stone, so also the columns on the porch. All capitals are carved with typical foliage motifs found in the other neo-Gothic structures of Poona. All arches are round and wide.

Since ornamentation is kept at a minimum, the structure relies on red brick and grey stone for its effect. The use of brick is also unusual in an area where various stones are found in abundant supply. Only one other large edifice in Poona is made of bricks—the synagogue. The Council Hall, though smaller than the Bombay Secretariat, is from all aspects a more successful structure.

VI D COLLEGES AND SCHOOLS

Bombay University was established in 1857, and during the years when the great public buildings were being built, (1868-1878) a number of college and school buildings were also raised to house institutions which had already existed for sometime, and had been functioning elsewhere.

As western education became popular, and more and more Indian students took to higher learning, need for better and bigger edifices arose. Some institutions made suitable alterations from time to time, while others had to shift to altogether new structures.

A proposal for alterations to the Grant Medical College, one of the earliest institutions to impart medical education, showed the need for spatial changes to keep up with newer methods of instruction. The Director of Public Instruction felt the need to update the college in keeping with the medical colleges in England. It is interesting to note, that already by 1856, the number of students had increased, so that the proposed alterations envisaged a larger Museum space, and more library room. A new 'chemical lecture room', and a demonstration room next to the mortuary for anatomy lectures was also projected. All alterations were to be effected by building up on available space and rearranging spatial divisions, to save costs. (*P.W.D. Gen. Vol. 33. 1143*).

In 1870, a notice was sent out inviting designs for a proposed college at Allahabad. Though quite far away from the Bombay area, the requirements

given in the notice for the college plan were relevant. These were—an Entrance Hall, a Central Hall or Theatre with superficial area of 2,500 ft., a Library, four Lecture Rooms with bathrooms, a Library Office, and a Storeroom (*P.W.D. Gen. Vol. 2046 of 1870—846 File*).

These being basic requirements of all colleges in India, there were only variations in dimensions and number of classrooms. Generally, most of the colleges surveyed, are the neo-Gothic style, with superficial variations in ornamentation and colour. The facades are generally symmetrical, sometimes broken with an odd turret or a spiral stairway. Capitals and cornices, arch mouldings and label stops may be more or less intricately carved with foliage designs, and there may or may not be crenellated balustrades, but generally the main features are similar—a central tower, and a prominent gable at front, with a porch, and the two arms extending on either side.

As regards the plans, the colleges are again, generally symmetrical. Except in one case, the ground plan is either a solid rectangular block as in St. Xavier's College, Bombay, or in the shape of an inverted E or H, and only the Elphinstone College building has a square plan with a courtyard. But here the building had originally not been projected as a college.

St. Xavier's College, built from subscriptions raised by Catholics and with some government aid, cost Rs. 2,62,194. The structure on plan forms a solid rectangle, with the front facing on the Esplanade. It is rather a severe building, whose undecorated facade is broken only by a large porte-cochere and an octagonal tower. Along the front of the edifice, runs a narrow corridor, leading on to rooms beyond. Entrance is through a large doorway, into a spacious hall, which opens on the other side, to a courtyard. The corridor has a corresponding one on the first floor, which is reached by staircases at either end of the building. The rooms are rather small, and dark. The pitched tiled roof and the octagonal tower create a grey mass which is not enlivened by decorations. The original building has long since been outgrown, and numerous additions have been made, extending in squares around playgrounds and courtyards.

The Deccan College, Poona, formerly Poona College, was housed in its new home when it was raised in 1868. Almost half its cost was paid by Sir Jamshetji Jeejeebhoy. It was designed by Gen. H. St. Clair Wilkins, an army engineer.

The plan is E shaped, facing the road lengthwise with the two flanking arms, projecting outward. The central projection is very short in the form of a polygon on plan, and carries a tower. Arcaded verandahs at both ground and upper levels extend along the main facade and the two wings. In the central building, is a large hall supported by thick columns, and smaller classrooms. The wings are divided into a double row of small cubicle-like rooms, meant to be used as students' living quarters,

The special feature is a carriage way which pierces the central building at the north-east angle. This carriage way, is rather unusual and has a vaulted roof. The vaults are ribbed with decorative bosses and carved capitals. The whole is divided into two bays. Thus guests could drive in and reach the stairs under cover. This entrance is faced with dressed stone of a lighter colour than the rest of the building, and above the arched opening are short columns bearing the pointed arches, being a continuation of the first floor verandah. A tower, 106 ft. high had crowned the porch, but was struck by lightening and does not exist any more. The tower which had been the dominating feature, was not in the centre, but off to one corner (north-east) and broke the symmetry somewhat.

The steeply pitched iron roof, is a prominent feature. It is surmounted with iron crestings and finials. This roof is too steep and because of the lack of eaves, gives an unfinished and abrupt impression. One contemporary observer called it a 'hat without brims'. (*Bombay, Builder, Vol. IV, 1868, Sept. p. 89*).

The grey-trap facade gives it a heavy brooding look, and the Gothic details neither lighten it, nor do they serve any logical function. There are corbel tables used only for decorative purposes on facades; the pillars are thick and their bases are rather shapeless. But the capitals are carved with the familiar Gothic motifs—stiff-leaf, water-leaf, volute, ball flower etc. The eastern arm also has a square tower, with battlements. There are gargoyles, and arched windows with wooden tracery.

All this however, did not detract from the useful plan of the main building, which had for the time an adequate amount of space, for normal college activities, two large halls on both floors, and a number of classrooms. The students' quarters being attached, was convenient for all.

Another variation on the E plan, is the J.J. School of Art, Bombay. Here the main block is a broad solid rectangular mass, and the flanking arms are of very short projection. The central projection is made up of the porch, which is wide and prominent. Recessed arched openings on either side of the porte-cochere are ornamented with Gothic details. The mouldings are carried on dwarf columns, standing on corbels with elaborately carved capitals.

The building was designed by G.T. Molecey, and an Indian, Khan Bahadur Muncherji Cowasji Murzban was the assistant engineer in charge. Most of the cost came from the munificent Jamshetji Jeejeebhoy as the name of the school implies. Interestingly, the designs of the school were first entrusted to William Burges, a well-known English architect of the Victorian era. His design was a combination of his characteristic heavy Gothic and Indian motifs like the Islamic dome, but it (design) was never executed.

The facade is of dark and dressed grey stone, in regular courses. Visual relief is provided by the lighter buff coloured stone used for the arches and balusters on the verandahs on both floors. On either side the facade terminates in a gable with an attached octagonal turret. The gable is pierced by a round opening and topped by a finial. The pitched roof is low, and hidden behind a stone balustrade, carried on a corbel-table. The entrance is through the porch leading on to a short wide covered verandah, beyond which is a spacious hall divided into two compartments by a wide arch.

In 1859, a school 'to impart knowledge of Mechanics and Engineering' was started in Poona. The idea was to train civil engineers, surveyors, overseers, foremen and artisans for the subordinate offices of the P.W.D. A building to house this institution became necessary and was constructed in 1865. (Parts of it were renovated and rebuilt in 1965, but the old facade and plan were adhered to).

There seems to be some confusion as to the designer of the new building. A contemporary source names the architect Trubshawe, heading the Ramparts Removal Committee, as the architect. (*Bombay Builder, 1868, Oct., p. 122*). The official Gazetteer credits W.B. Howard, executive engineer as both designer and builder. Probably Trubshawe's designs were modified by Howard, who was the engineer in charge.

The building was originally constructed as almost a square. (The L shape was created later by additions to the original structure). The entrance to the present building is through a porch facing north into a vestibule leading to a Central Hall. This is the main feature of the college. The hall rises to the full height of the three storeys. On all four sides of it there is a round-arched arcade. The two aisles terminate at the second storey, while a row of clearstory windows let in light above them. The hall is strongly reminiscent of the inside of a church. This effect is heightened further by the great round window filled with stained glass. The clearstory windows with round arches and columned supports, are fitted with stained glass too, and also help to enhance the ecclesiastical effect.

The arched gallery around the hall is supported on short but very thick columns, as in the hall below. Rooms leading off the gallery were earlier used as class rooms and laboratories. The staircase leading to the upper floor and to the top room of the tower, is at the east corner of the facade.

The facade walls are of dark grey trap. The tower at one end is topped by a pitched roof with a finial. Projecting balconies on ornamental brackets, and well proportioned arched openings give the tower a lightness which does not detract from the picturesque effect. This tower is the most important feature. Though it is not at its usual place at the centre of the facade, it is still the most striking element.

The central part of the facade is pierced by lancet windows grouped in twos and threes. The sloping roofs are hidden behind a balustrade of medieval saracenic battlements. Pinnacles and chhatris are used to break the horizontal effect. Other ornamentation is kept at a minimum—there are corbel tables and carved mouldings and gargoyles, but these do not distract from the neat structure. The building has a tight uniformity, and an Indian look, which has been combined with Gothic detail and character. It is interesting as one of the earliest attempts made in the western part of India, of combining Victorian Gothic with eastern decorative forms, which gave rise to the style characterized by some as "Indo-Saracenic". The edifices in Bombay which are characterized by this attempted fusion of styles are of a later date.

In 1889, was constructed a huge edifice which housed the college named after Elphinstone, and begun for the higher education of Indians. The largest share of donations came from Cowasji Jehangir Readymoney (2 lakhs) and the whole edifice cost over 7½ lakhs of rupees.

The name of the architect is given as M.C. Murzban who had by then been promoted to the post of Chief Engineer, and had assisted at the building of the J.J. School of Arts.

On plan, the building comprises three sides of a rectangle, with a courtyard and the fourth side enclosed by a wall and gate. The side facing the main road is about 256 ft. long and three storeys high. Around the courtyard there are galleries on each floor, for access to different parts of the building.

One entire wing was given for the housing of the archives. The second floor, was built specially for the records and was therefore made fireproof. The use of wood in the construction was eliminated as far as possible. Instead of wooden beams iron lattice-girders were placed on the main load-bearing pilasters. (These lattice-girders were commonly used in the early iron framed structures). The cross-girders were also of rolled iron, and the fillings were of concrete. The only wood used was in the doors and windows.

The windows and doors were also barred for the sake of security. For the storage of archival material iron racks were put in, so as to minimize the danger from termites. G.W. Forrest, Director of Records, planned the fittings with the help of a Committee. (*Handbook, Bombay Archives, pp. 2-3*). When the records were moved down to the ground and first floors, these were similarly 'fireproofed'.

The facade of this structure is on a massive scale. The entire front consists of a wide and heavy arcade, along the broad pavement of the road. This succession of arches is repeated on a smaller scale on the successive storeys. The facade would have been monotonous if it were not for the central portion,

which is a massive tower, rising to a height of five storeys in two stages. Pinnacles at the four corners and the pitched roof give the structure its vertical skyline. At the two ends there are square towers housing the staircases, on which the vertical pinnacles are repeated. The main entrance is an impressive moulded arch, springing from short columns set on pedestals. The ornamentation, the dressed Coorla stone, the symmetrical repetition have been combined to form a massive structure without being monotonous or flat.

The colleges meant for the spread of western education amongst Indians, and built with the aid of large donations from them were thus built in a European style. The fashionable neo-Gothic was used in all cases and the buildings were generally based on symmetrical plans. They could not really be singled out in terms of originality of plan, and only in one case was there an attempt at originality in facade construction by the incorporation of 'Saracenic' features.

There is one school however which requires a special mention. This is the Elphinstone High School, situated next to St. Xavier's College on the Esplanade. It was designed by G.T. Molecey and was constructed with the aid of a large donation from Sir Albert Sassoon. The building shows many unusual features. Its lengthy facade is broken by a range of very prominent stairs, leading straight upto the first floor. These are 40 ft. wide, and ascend in a graceful sweep from the street. The porch is formed below the stairs. Having climbed these, the entrance is a large hall, 62 ft. X 35 ft. There is a library over the hall, and a passage-way all around. The hall rises to two storeys in height. Twenty-eight classrooms, and four staff rooms, are included in the plan. The most original feature however, is the covered playground under the central part of the structure, which is an ideal solution for children's games in the tropical climate. The general details of decoration however, followed the neo-Gothic patterns.

VI E   VICTORIA AND ALBERT MUSEUM

One building made during the share boom and the Gothic revival, but of a totally different style is the Victoria and Albert Museum, at Byculla. Begun in 1862, when Sir Bartle Frere laid the foundation stone, it was not completed till 1872. It was projected and designed by a municipal engineer, Mr. Tracey, though some alterations were later made by a private firm, Messrs. Scott Mclelland and Co., after the death of the designer. The extra expenditure involved in these changes led to the delay in completion. Most of the expenses were raised by subscriptions from the Indian public, but when the economic depression overtook Bombay, difficulty was found in raising the extra expenses.

The style chosen for this was not neo-Gothic, but an 'Italian Renaissance'. 180 ft. in length, it is a double-storeyed rectangular block, raised on a plinth. The facade, is made of a central part, flanked by two slightly projecting ones. Entry is through three large round-arched openings at the centre. On the storey

above, French windows are placed between high columns which are carried upto entablature. All windows are large and have triangular or arched pediments carried on consoles. The balustrade hides the pitched roof and carries urns as a decorative feature at regular intervals. The entablature is plain, and the architrave is rather compressed. The cornice is carried on a corbel table. Strongly accentuated quoins add strength to the corners and also form a decorative element.

The space inside is taken up mainly by two large halls on each floor, with smaller rooms at one end. At the far end of the lower hall, a graceful staircase, bifurcating mid-way, leads to the first floor. Museum exhibits are displayed in the halls, and the smaller rooms above. The offices are set up in the small rooms on the ground floor. Plenty of light comes through the large windows.

The museum is an adequate structure for its purpose. Without the ostentatious grandeur of the traditional neo-Gothic then being built, it appears as a pleasing structure creating a sense of neat proportion when viewed amidst the greenery of its garden surroundings.

VI F. RECORD OFFICE

A special Record Office was built in Poona, to house the papers, manuscripts and other records of the Peshwa's government, as well as the records of the British. Popularly known as the Peshwa Daftar, this structure was begun in 1887, and completed in 1891. The architect was Mr. Adams, the then Executive Engineer.

On ground, the plan is rectangular, and double-storeyed. Four arms of the building enclose a courtyard, which has a high tower at the centre, carrying a water tank. One wing—the back, has a large gateway, while the rest of this side is enclosed with iron bars. Two flights of stairs go up to the first floor on either side of this gate.

The two wings on either side, afford space on each floor for four large rooms for stacks. The entrance is under a terraced porch, and through a small hall which carries the staircase to the first floor. Beyond this is an arched verandah running around three sides of the courtyard.

The first floor also has a similar arched verandah with a vaulted roof. On either side of the landing are two rooms used as offices, with broad cross vaulted roofs.

Though the Elphinstone College building, which houses the Bombay archives also has a courtyard plan, the Record Office at Poona having a similar plan, is quite unique. It was built specially for use as a storage place for records,

with elaborate arrangements for fire-fighting. It was also stylistically a departure from the neo-Gothic patterns seen so far in the other buildings.

The structure was made fireproof, again by the minimal use of wood. Its windows were barred. The only wood used was in the shutters of doors and windows. Moreover, a system of fire houses was set up in case of emergency. Originally made of leather, these hoses were fixed to the walls of the gallery around the courtyard, at regular intervals. These could be fed with water from the tank, situated on top of the tower already referred to. The stackrooms were filled with iron shelves.

The Record's office is a small, neat structure functional as well as pleasing. In Bombay at this time, experiments were being tried and departures made from the strict Gothic revival. The Record's office is also a departure, though it is hard to name its style.

Made of dressed grey stone, almost all its decorative elements are picked out in white Porebunder stone. The facade is made up of three pediments, the central one being wider than the rest. Decorative sculpture in white stone fills the pediments. Fluted pilasters, console corbels, white window surrounds create a highly decorative impression. Sweeping curves attached to the pediments give them a look similar to Dutch gables. Arches of windows are round. The facade also has a strange curling ornament in grey stone repeated at various focal points, —i. e.; between pilasters, under windows etc. The tower rises above the facade, —a fluted square pillar carries a gallery and a pitched roof. The water tank is surrounded by the gallery and is reached by steep winding stairs inside the tower. The sculptured motif on the pediment is repeated on the sides of the gallery around the tank.

The curling, curving lines, give the structure a restless baroque look, but the neat proportions are very effective.

VI G. LAW COURTS

The earliest law court in Bombay was set up at Maplapor in the 17th century. From there the court house was often shifted and finally came to be situated in the massive pile, erected specially to house it in 1879.

Its architect was Col. (later General) J.A. Fuller of the Royal Engineers, while the interior design drawings were made by John Adam, the civil architect. Fuller chose the fashionable neo-Gothic style for his Law Courts, but he combined the heavy Early English style with Venetian Gothic features like arcades, balconies and verandahs. It may be remembered that Fuller had also been connected with the finishing of the Secretariat, but though certain features of both structures are similar, the High Court does not have the monotonous effect of the earlier build-

ing. Rather, it creates the impression of mass. The use of the dark blue basalt to face the rubble walls, heightens this effect. A picturesque grouping is attempted by the projection on the central part of the facade, the porch, the towers and the arcaded verandahs.

The plan of the High Court is again symmetrical, with the central part rising to 178 ft. in height, with a high pitched roof. The main entrance is through a porch on the west side. This porch leads on to a covered verandah. From this, a rather narrow corridor cuts through the centre of the building to the main staircase on the eastern side. Two octagonal towers housing spiral staircases stand at either side of the porch.

The whole structure out to the north and south, in two wings on either side of the central portion. At the extreme ends two arms, set a little inwards extend to the east. These two wings are short and so there is no courtyard formation on this side. Arcaded verandahs or 'galleries' run around the entire structure providing a screen for the walls, and allowed the air to circulate freely around them.

Two narrow rooms, flanking the entrance corridor were meant to be used for prisoners and a printing press. Another entrance near the main staircase on the eastern side, was meant for the public. A total of eight other stone staircases, including the two elliptical ones, provided access to the upper floors where the courts are situated.

The first and third floors housed the offices of the High Court judges, while there were six court chambers on the second floor. The courtrooms were large and had been appropriately decorated in cream and gold. Most interior fittings were probably designed by John Adams, and floors were paved with Minton's tiles. Some rooms had mosaic flooring.

The central corridor, groined in Porebunder stone, is rather dark, and detracts from the beauty of the entrance way. The plan was not approved fully by those who had to use the building, and there were periodic complaints from the lawyers who found the arrangements inconvenient. Obviously accommodation inside was inadequate too, for we find petty officials (like stamp clerks) also protesting that the places allotted to them on the verandahs were subject to the vagaries of the climate. (High Court File, I.A.).

The facade, stretching 562 ft. in length is three-storeys high. The octagonal towers have pinnacles which are of white stone, and surmounted by two statues of Justice and Mercy.

Capitals, corbel tables, mouldings etc., are highly ornamental. Particular mention must be made of the woodwork inside. Ceilings of the courtrooms,

specially the Criminal Court, are of dark polished wood, with a carved centre-piece. The latter has a carved teakwood gallery around three sides of the room, for the use of the public. The sculptured capitals of the western corridor are worthy of special notice. Amongst the graceful foliage are carved heads of wolves, and foxes with lawyers bands around their necks. There is also a one-eyed mon-key—judge who holds the scales of Justice tilted to one side,—a subtle ridicule of the judicial system which somehow escaped the notice of the authorities !

Another neo-Gothic building is the Police Court, on the esplanade. It was completed ten years after the High Court (1889) and its architect was John Adams, who had been associated with Fuller in the earlier project. At the time of building he was the architectural Executive Engineer, and Surveyor to government.

This structure is again a symmetrical one with an imposing facade. It is however, a much smaller building meant to house the courts in which the less important criminal cases are dealt with. The entire length of the facade is 300 ft. approximately. Entry is through a porch. In the hall within, a large staircase (30 ft. square) leads upto the Magistrate's Court. This is a large room, being 66 ft. long and 50 ft. wide. Provision for a dressing room and a private room for the judge, rooms for the lawyers, and a place for witnesses has also been provided in the plan.

Lock-ups for prisoners, storerooms for stolen goods and record rooms were all on the ground floor. There were separate lock-ups for Indian and European men, as well as for women of the two races.

The most noticeable feature of the structure is the profuse ornamentation along the whole facade. Mouldings, arches, fantastic gargoyles and capitals are intricately carved. Most of the facings are of Porebunder stone, and the arches of Coorla. The whole is an exhibition of the carver's art, and gives the building a rather distinctive appearance.

VI H. P.W.D. SECRETARIAT

Situated behind the High Court, the Public Works Secretariat was built to the designs of Col. H. St. Clair Wilkins, who was also responsible for the designs of the Old Secretariat. For this structure, he again chose a symmetrical plan clothed in a neo-Gothic facade. From a central, higher portion of four storeys, two wings extend on either side. The central part houses the large hall, which runs across the entire breadth of the building, and opens on the other side. The staircase is also situated here. On either side of the wings are various offices. The arcaded verandahs on all storeys as usual, from a screen against the main walls.

The facade is 288 ft. long, and the walls are faced with dressed and coursed blue basalt. These alternate with bands of lighter coloured Coorla stone.

All dressings are of Porebunder stone, and a polychromatic effect is created by alternating this white stone with red or blue basalt in the arch voussoirs. This structure took almost four years to build (1869-1872) and cost over four lakhs of rupees. An Indian, Wasudeo Bapuji Kanetkar was the assistant engineer. It stands at a prominent spot on the esplanade, but is somewhat overshadowed by the High Court next to it. Its sombre blue-grey, and lack of profuse decoration, matches with its neighbour and adds weight to the neo-Gothic concentration along the esplanade.

VI I. POST OFFICE AND TELEGRAPH OFFICE

The General Post Office (now known as old G.P.O.) was erected at the same time as the P.W.D. Secretariat (1869-1872). The well-known architect Trubshawe, assisted by W. Paris, was responsible for the building which cost almost six lakhs of rupees.

Slim pillars support the arches of the verandahs in the two wings, and the projecting eaves cast a pleasing shadow on the facade. The structure is three storeys high and has a clearly demarcated central portion, though this part is not raised higher than the rest of the building, as is usually the case. The porch accentuates the centre, and two towers flanking it end in spires. Ornamentation is kept at a minimum, giving the Post Office a more severe look than the other buildings of the same type.

In between 1871 and 1874, the Telegraph Office was projected and built. The designs were done by W. Paris, who had by then been appointed as architect to the government. Turned towards the west, the walls of this building are of Coorla stone. The columns are of blue basalt.

The general plan is as usual, symmetrical and proportions have been harmoniously blended. Nothing looks out of place, while the profusion of intricately carved ornament shows the workmanship of the Indian craftsman. (The new wing on the south was added later in 1887, but designed to blend with the rest of the structure).

VI J. UNIVERSITY HALL AND LIBRARY

The year 1857 saw the establishment of the three Presidency University at Calcutta, Madras and Bombay respectively. Within the next few years, two buildings were projected for the use of the University in Bombay. The earlier of the two, was the Senate Hall, and later, the library with its famous campanile tower was constructed.

Money for the project was as usual raised mainly from donations by generous Indain citizens. Sir Cowasji Jehangir gave one lakh of rupees for the Hall in 1863. This was supplemented by the government with an amount of two lakhs. The designs were entrusted to Sir Gilbert Scott, one of the foremost architects of England at the time. Scott's original design for the Hall was estimated to cost over six lakhs. According to the conditions of the donor, the government had to raise the remainder of the cost. So, the syndicate asked the government for a larger grant. However, the government of India was unmoved, and refused to sanction the amount asked for. The impasse was finally broken when the government architect was told to present a cheaper plan and to suppress the profuse ornamentation of the original design to save costs.

The new plan which was finally approved, kept to the essential dimensions of the original plan, but with less ornamentation. The inordinate delay caused by these negotiations, irritated the donor and Sir Cowasji at one stage asked for the return of his donation. (*P.W.D, Gen. File 380, University and Hall*).

Another controversy had arisen even earlier, regarding the location. Originally, the plot earmarked for the University was the one on which the present High Court stands. But Gilbert Scott refused to design the tower or take the assignment if the plot was not changed. His objections arose from the fact that there happened to be three commercial buildings in the area, which he felt would detract from the effect created by his designs. The present plot was at the time divided by a lane, but the Governor was persuaded to make the plot into a square.

However, the final outcome was a happy one, for the location of the two buildings following a succession of stately edifices, hold the attention of the observer and contribute to a most impressive boulevard architecture.

The Senate Hall was finally begun in 1869 and finished in 1874, and much of the carvings and statuary had to be omitted because of the shortage of funds. Though the final cost of the hall was a little less than four lakhs, yet, the end appearance was very similar to Scott's designs. The plan, strongly resembled an English parish church and faced north. Here the main entrance is protected by a porch of elegant proportions. The south end has an apsidal projection. On either side of the northern facade are two angle towers containing circular staircases. These are beautifully constructed and have monolithic double columns.

The hall is generous in proportion, being 108 ft. in length, with a breadth and height of 44 ft. and 62 ft. respectively. The most impressive feature is the massive arch which separates the apse from the hall. This arch takes up almost 7 ft. of the length of the building. It ts supported on the outside by massive buttresses. There is a gallery round the three sides of the hall which is reached by the staircases in the towers.

The interior ceiling as now seen, presents an impressive and unbroken roofing, interrupted only by the massive arches of the apse. Great stone ribs from arches, giving the impression of space and mass at the same time. The ecclesiastical atmosphere is very strongly accentuated by the windows. The most conspicuous of these is the huge circular one on the north gable, which is twenty feet in diameter. Its outer ring has twelve parts filled in with stained glass depicting the Zodiac signs. All along the walls are long windows, also of stained glass, representing the arms of England, Scotland, Bombay etc., and those of the former Chancellors of the University who were also Governors of Bombay.

The roof is a high pitched one, and is covered with tiles made by a private company. The four spirelets at the four corners counteract the horizontal line. The two spires at the southern end provide additional weight as counterpoise to the thrust of the great arch. The walls are faced with dressed Coorla rubble. All other dressings like capitals, mouldings, cornices etc., are of white Porebunder stone. Most of the column shafts are of blue basalt. At the main entrance, they are of marble.

Though the original plans were made by Scott, who also wrote a large number of letters discussing alterations etc., the work was in charge of Lt. Col. Fuller of the Royal Engineers. His assistant was an Indian, Rao Saheb Muckoond Ramchunder.

The University library and Clock Tower were as we have mentioned earlier, also designed by Sir Gilbert Scott. This time the donation was from the merchant prince Premchand Raichand, after whose mother Rajabai, the tower is named. The donor wanted the edifice to be "an ornament to the city, and by becoming a storehouse of the learned works . . . may be the means of promoting the high ends of the university."

When the gift was made in 1864, the syndicate asked Scott to design a library which could ultimately house one lakh books, with space to store manuscripts. A large Reading Room was also necessary. He was also asked to design a Clock Tower which would be a landmark for the sea front.

Scott's designs, as for the Senate Hall, were again found to be too expensive. In spite of Scott's protests and charges of "doubtful propriety" laid on the government, its architect Mr. Molecey was put in charge of modifying the designs to suit the budget. This he did only slightly, and the original plans were adhered to as far as possible. The library was to harmonize with the Senate and an Italian Gothic style was adopted. The work finally began in 1869 and took ten years to complete. For most of this time, Fuller was in charge, with his assistant, Muckoond Ramchunder.

The library faces the west, and looks out towards the sea. On plan, it is a rectangle with an octagonal projection to the east. The porch which carries the campanile-like clock tower, extends over the main entrance to the west. At either end of the facade are towers containing spiral staircases.

The entry is into a large hall. On either side of this hall are two rooms of large size. Beyond the hall is the vestibule, projecting to the east in an octagonal form. It carries the staircase to the first floor. The stairs rise in a graceful curve one storey to the Reading Room. The vestibule is vaulted and the groins are of white stone. The ribs spring from dwarf columns standing on corbels. On the landing, the most noticeable features are the two cross arches. They spring from two corbels, which are carved supposedly into representations of Homer and Shakespeare.

The Reading Room has a pointed barrel vault roof with a coffered wooden ceiling. This huge room extends the length of the building, and is 146 ft. long and 30 ft. wide. The windows are large and mullioned. Slim columns with carved capitals form mullions to the arched windows. The stained glass fillings are set in iron frameworks which were imported from the studios of a private firm in London. (*Maclean's, 1891. p. 195*). All ornamentation inside—mouldings of arches, capitals, corbels etc., is in white stone.

Over the porch, in the first stage of the tower, is the librarian's room. Large French windows open on to a narrow gallery outside. The tower roof is also vaulted. On the outside, the facade walls are screened by a wide-arched loggia on the ground floor, and an arched verandah above it. The arches on the upper verandah are cusped, with pierced tracery on the spandrels. A finely worked balustrade above this, hides the roof. The two spiral staircases are practically open, as they are pierced by a series of long openings. These stair towers are topped by pointed spires.

The main focus of the structure of course, is the gigantic Clock Tower, which rises to a height of 280 ft. It can be clearly demarcated into three successive stages, all very richly decorated. The first stage is square on plan with a plinth of 5 ft., and contains both the richly decorated entrance arch and a gallery on four sides reached through the French windows of the Librarian's room. Corner buttresses carry niches which hold the famous statues. Each one stands in its own niche within a gabled canopy, and each represents one of the various castes living in the Bombay Presidency. The distinctive mode of dress of each community is clearly depicted. One can detect the Rajput, warrior-like, with his hand on the hilt of his sword; the Maratha, Kathiawari, the Parsi, Brahmin, Gujerati Bania and a Memon. The statues were modelled by Muckoond Ramchunder and carved on the spot by local craftsmen out of Porebunder stone. (*Maclean's, 1891, p. 196*).

The second stage of the tower is the tallest—118 ft. Here the square form is changed to octagonal. This stage begins with a balustraded gallery and rises up to the clock-face. The clock is fixed under gables, and has a narrow gallery under its face on all sides. The last stage, is a gracefully curving crown-steeple terminating in a spire, carrying a stone sphere. A dimly-lit narrow stairway goes right to the top. To make it lightening proof, no metal finials or other decorations were allowed at the top. But, "a narrow metal tube or conductor ran all the way down to the ground and was then taken 60 ft. away and imbedded deep below the surface." Perhaps this has kept the tower safe while many shorter structures have been damaged by lightening.

The crown-steeple also has a double row of large statues in niches at the angles, but at that height, they blend with the white ornamentation of the spire and can barely be distinguished from the ground.

The clock tower modelled on the famous Campanile of Giotto in Florence, lent a distinction to the skyline of Bombay. Visitors sailing into the harbour could easily see from a distance. With its height, which seen from that distance overpowers the actual library building itself, it is an outstanding example of Victorian Gothic. At the same time we can detect also, the contribution of the native craftsmen in the ornamentation and the statuary. Diaper designs on tympanums of arches, foliage carved on capitals and other ornaments, clearly show the hand of the Indian carver. The statues depicting Indian subjects were western in concept and execution, but done by Indians.

VI K MARKETS

During the second half of the 19th century, Bombay and Poona saw the construction of several markets which catered to both the colonial as well as the Indian population. The need was felt to have central markets under hygienic conditions when the population grew in numbers. It was felt that if all the shops selling a variety of fresh foods were brought under the same roof, it would be most convenient.

The Crawford Market of Bombay, was begun in 1865, and was designed by Mr. Emerson. The architect chose a different type of Gothic from those of the other structures. Timber was used with a minimum of ornamentation, while the focus was on the three pieces of relief sculpture planned to decorate the entrance.

The sculpture was the work of J.L. Kipling, the father of the celebrated author Rudyard Kipling, who was then Principal of the School of Art. He chose an Indian "well scene" for the first of the pieces and executed it in white marble. For this, Kipling and Emerson have earned praise from contemporaries. They

were supposed to have brought back the "true spirit" of Gothic art where "architect and sculptor working together as in the old days", with "subjects taken from living nature seen around us and not from Greece or Rome", created progressive art. (Village well scenes were also a very popular theme with medieval Indian artists and numerous miniatures on this theme have come down to us). The plainness of the rest of the structure was also praised because it allowed more attention to be focused on the front where the sculpture was. (*Bombay Builder, IV, p. 211, April 5, 1869).*

In spite of this lavish praise however, the style of the Crawford Market does not seem suitable for the Bombay weather. Shop owners and customers complain till today of stuffiness and heat.

The plan was similar to that of many markets built by English architects in India. A large central space carried a 128 ft. high tower above it. A drinking water fountain stands at this place. It was donated by Cowasji Jehangir Readymoney. On either side of this, are two wings of uneven length. The one to the right contained stalls for fruits and flowers etc. The one on the left is much longer (350 ft. approx.) and had shops for vegetables, spices and dry rations. The whole structure was covered by a double iron roof. For the sake of hygiene, the ground was paved with stones which are supposed to have been imported.

Another type of market was the one built in Poona by the municipality between 1884 to 1886. The plan, octagonal in shape has a number of radiating covered wings projecting from the central portion like the rays of the sun. The galleries hold the various stalls, and the whole is surmounted by a tower in the centre, which is 80 ft. high. The tiled roof is supported on teakwood frames and cast iron columns. This plan has since been adopted in many markets all over India. (Reay Market, as it was known, is now the Phule Market).

In 1885, the Poona cantonment area required a market for itself, which could be controlled and easily cleaned by the cantonment municipality. This market was constructed near the convent in the Sadar Bazaar area, and opposite the St. Xavier's church. It was designed by Lt. Gen. Ross and later supervised by Lt. Gen. Ducat. They chose a severe Gothic style for the facade which was made of grey stone. At present is pierced by arched openings netted over with wire gauze. There are four entrances at the four corners of the rectangular structure. Abutting on the entry arch, on all four sides are gables with copings and pinnacled buttresses. The centre part of the facade has a double gable.

The rectangular plan is partly open to the skies. Along the four sides are long covered corridors with pitched roofs supported on slim iron columns with carved capitals. Earlier the individual stalls were accommodated here. The back was closed, and the tiny 'shops' faced inwards. As it stands today passages

between the rows are uncovered. The centre is taken up by a large covered shed housing the fruits, vegetables etc. The roof is like those commonly seen on the old factories—a series of iron framed half-slopes, filled with glass. The floor is stone-paved. This small market is a good attempt to combine utility with the Gothic style. It blends well with the church opposite it. Small and manageable, its stone floors can be washed and thus be kept hygienically fit to cater to the European and Indian inhabitants of the cantonment.

VI L.   CLUBS

Clubs formed an important part of the lives of the colonial community in India. Associated with recreational activities specific to their culture, clubs were an interesting sidelight on the social life of the colonist. The club house, being the focus of the community during leisure hours, combined in itself many recreational facilities. Sometimes, they were meant to promote one specific type of recreation, for example the Royal Bombay Yacht Club, or the Turf Club, but also had facilities for other forms of entertainment and recreation—ballrooms, racquet courts, billiard room, card rooms etc.

One of the earliest of such clubs in the Bombay Presidency was the Byculla Club. Originally it was known as the Bombay Club, and then as the New Bombay Turf Club. Adjacent to the old Byculla race course, it had earlier formed a part of the race stand, and was taken over by the club. The part of the race stand which had an assembly room for ladies with two smaller rooms on either side, was taken over by the club. Between 1823 and 1845, various alterations were made to suit the changing needs of the members.

On plan, the building was a broad rectangle (almost a square) and was two storeyed. The lower storey was rusticated. The windows were altered to flat Grecian forms, from the original round arches in 1845. The main entrance was to the north. Over this was supported a projecting balcony on a level with the upper storey. The balcony was supported by columns of the Grecian Doric order, and was surrounded by an iron balustrade. (*Sheppard, 1916, p. 33*).

Additional rooms were made and in 1833 a billiard room was also added. In 1844 we are told that a dining room was projected by John Adams, of 'handsome proportions'. Iron columns for the entrance and portico and rails for the orchestra and staircase had been ordered. (*Ibid, pp. 33-35*). The porch had large arches on columns. (*Photographs of the club are reproduced in Sheppard, 1916, p. 94*).

Another interesting clubhouse was that of the Royal Bombay Yacht Club. Built in 1881 by Mr. Adams, who was the executive engineer, it was designed with a specific purpose. Since it was to stand on land reclaimed from the sea, it was

felt that a proper stone structure would be too heavy for the land. So a type of domestic Gothic made of timber-framing and brick was considered to be light enough for the reclaimed land.

The clubhouse has a large hall, which must certainly have been used as a ballroom. The walls are lined with timber and the roof vaulted. The plan includes a large dining room with an open timber roof, a billiard room and staircases. There are other smaller rooms which must have been put to various uses as bars, cloakrooms, cardrooms, bathrooms and even an ice room. (*Maclean, 1891, p. 203*). A wide grandstand verandah is specially designed to overlook the harbour and the regattas. At one end a look-out tower is constructed for the judges to watch the yacht races.

The club stands on a prominent area which was at one time a part of the Bombay dockyard. It forms one point of the triangle formed by the Gateway of India, and the Taj Mahal Hotel, both constructed much later.

In Poona cantonment, two well known clubs are mentioned often by old residents. The Club of Western India, and the Gymkhana—neither of which are extent.

The Club of Western India which was begun in 1866 is shown as a prominent feature on the map of the cantonment. Situated about two kilometres south-east of the railway station, it was a one-storeyed structure with a large porch. The original clubhouse and the land around it belonged to Indian owners. The house was used as a domestic residence by an Englishman who hired it from the owner. It was thus a good example of how the bungalow could be adapted for other uses. (See below, xvii). The centre of the ground plan was occupied by an octagonal room used as a newspaper room. From the porch, entry was into the large drawing room, which was flanked on one side by arched recesses. These two recesses were used as card room and magazine room respectively. There was also a dining or coffee room, and even a roofed gallery for use as a hot weather dining space. A billiard room was obligatory in a club of this sort, and was attached to the main house by the gallery. Other structures on the premises were residential blocks, servants' quarters and stables. (*Gazetteer, Poona, 1884, III, pp. 362-63*). A covered racquet court still extant, was raised in 1868. It had arched windows and wrought iron along the ridge of the pitched iron roof.

The Gymkhana Club, was basically a sports club and so it had wide areas of free space to be used as courts for tennis, croquet, polo and golf. Badminton courts were provided under cover. The structure was in the form of a cross, in which each limb was a court, and the centre was a square area for spectators. The specific function of this club being recreational sports, it provided special areas for these.

VI M. HOSPITALS

A number of hospitals were built during the 19th century in the Bombay Presidency, specially in Bombay itself and the cantonment stations. The various military hospitals were mainly of a utilitarian character, and followed the regular barrack-type plans which were a trade-mark of military architecture in India. It was only in the hospitals built after the middle of the 19th century for civilians, that style and ornamentation were given importance.

Most of these hospitals were again the work of military architects, men whose names were familiar due to their association with other public buildings.

Between 1863 and 1867, Sir David Sassoon, the Jewish millionaire, donated a large sum of money for the construction of a hospital in Poona. It was to house both Indian and European patients, and was designed by the military engineer, Col. Wilkins. Wilkins chose the English-Gothic style, but modified it for the climate, by the addition of the obligatory verandahs. Made of local grey trap stone, the plan was symmetrical, as is usually the case with the buildings of the 19th century.

The building is double-storeyed and on a rectangular plan, 227 ft. long and 50 ft. wide, stretching in an east-west direction. The central part houses the broad staircase leading to the first floor. Arcaded verandahs on both sides screen the walls, and the windows of the rooms inside open onto these verandahs. Both floors are divided into large wards, on either side of the staircase. The first floor was originally meant for women, both Indian and European in separate wards, and the southern part of the upper floor was kept for men—both Indian and European.

The ground floor also has a room meant for a dispensary, while the operating theatre was earlier housed in a room above the porch. There is a tower, 96 ft. high, terminated by a pitched roof. This carries a clock face and also a water cistern at the top.

Other necessary rooms, like the morgue, cook-house, servants' quarters, infectious deseases ward, and quarters for the staff, were detached and built separately on the grounds.

The Sassoon hospitals resembles the Deccan College building in many ways, specially the ornamentation, and the shape of the ogee arches. The iron ornamentation was produced by Mr. M. J. Higgins of the Bombay Art School. (*Bombay Builder, Sept. 1868, p. 88, Vol. IV*).

The Gokuldas Tejpal Hospital in Bombay, named after the generous donor, was projected for Indian patients. Its architect was Fuller who had also been

associated with many other public buildings of Bombay. The edifice was begun in 1870, and took four years to complete. Muncherji Cowasji Murzban (who later designed Elphinstone College) was assistant engineer in charge.

Again built on a symmetrical plan, the architect had originally chosen the English Gothic style for his hospital. But, possibly due to the dictates of climate, many features from the Venetian Gothic, so familiar to the Bombay scene were added.

The pitched tiled roof is also very prominent on this building.

Another hospital in similar style was the St. George's Hospital. Three storeys high it was also constructed on a symmetrical plan, and its central gabled portion was half timbered. The galleries on the ground floor and first floor, were arched; the arches on the former being round and the latter pointed. The second floor was closed in, possibly at a later date. (Plans and elevation to be seen in P.W.D. drawing office file of 1889).

Other hospitals, including the Cama Albless, were constructed in Bombay during the second half of the century, and all in various types of Gothic style.

VI N. SAILOR'S HOME, RAILWAY OFFICES AND THE MUNICIPAL BUILDING

The buildings of Bombay acquired special significance in the hands of the city's best known architect. This was Fredrick William Stevens who designed four of the most outstanding structures of the late 19th century.

One of the earliest of his buildings, while he was still in government service, is the Sailor's Home (now Council Hall) on Apollo Bunder. It occupies a magnificent site and by its size and mass, dominates the entire precinct. Begun in 1872, it was completed in 1876 at a cost of more than three and a half lakhs of rupees. An Indian prince, Khanderao Gaikwad gave a handsome donation for its construction.

Stevens chose a ponderous Gothic for his edifice, which today seems too pretentious a structure to be used merely as a home for the sailors. The facade is dominated by a large gable, pierced by an arched opening. It is surmounted by a sculpture of Neptune. The coping on the gable carries crocket-like ornaments, (which are also to be seen on the dome of the Victoria Terminus), designed by the same architect. There are square towers at either end with arched windows, and also bartizans and spires. Arched verandahs from a screen around the entire structure shielding it from the sun.

The plan facing north-west is again symmetrical. The entrance leads to a central hall containing the stairs. The rooms inside are spacious and were used

as dormitories, reading rooms, library, bar etc., for the sailors. It was a typical example of the neo-Gothic of the time.

The original drawing of the Sailor's Home, was totally different in conception to the one finally chosen. In this drawing made around 1870, Stevens tried to combine Islamic and European features. The long facade rose in three tiers of differing lengths. The third storey was short and formed an attic, and was topped by a pediment carried on round arches. There was also an uncovered balustrade of which was ornamented by pinnacles shaped like 'Chhatris'. (There were similar features in Stevens' other building, the B.B. & C.I. railway offices). Arcaded verandahs on the front of both storeys with round arches of cast iron created a classical motif, emphasized by Corinthian columns. Miniature domed ornaments are repeated at all the corners. The drawing is interesting as it shows that even at that early stage, Stevens was experimenting with the styles, especially with the concept of coalescing the foreign and the indigenous. In this he showed himself well aware of the trends and experiments taking place in other parts of India at this time. (See last chapter.) However, this design was obviously rejected for the more staid and massive one finally implemented. Perhaps the Bombay government, being conservative as government departments usually are, found the design too avant-garde for the time. (Drawing No. 3, Bombay, R.I.B.A. Collection).

It is significant, that the development of Stevens' style took place in the two structures commissioned by private railway companies, and that too when he worked independently and not as a civil servant. Stevens was on loan to the Great Indian Peninsula Railways (G.I.P.) when he designed the Victoria Terminus, and had already resigned when he designed the offices of the B.B. & C.I. Railways.

The Victoria Terminus (V.T.) is a massive pile housing the offices of the G.I.P. Railways, and providing a facade for the train sheds and station behind. It took over ten years to construct, and was finally ready for use in 1889.

Stylistically, Stevens' followed the Italian Gothic but added several new features which give the building its special flavour. Though it is true that the "Victoria Terminus remains fully in the tradition of the mid-Victorian Gothic revival of Scott and Burges", (*Stamp, 1977, p. 26*), he nevertheless blended, or rather adapted Indian forms of ornamentation to the overall Gothic pattern.

The pile is crowned by a massive dome which is its most striking feature. This in itself was an innovation, and was perhaps the first masonry dome to be successfully erected over a Gothic building. It is likely that Stevens was influenced by Scott's unexecuted designs for the Berlin Reichstag, in which he had visualized a similar dome. (*Stamp, 1981, p. 365*). The most obvious inspiration was however, Scott's St. Pancras Station Hotel, London. The V.T. has a

symmetrical plan like most of the Gothic revival structures. It forms three sides of a rectangle and the whole frontage is more than 1500 ft. long. It is three storeys high, and the walls are protected by perfectly proportioned, round arched verandahs. The two wings stretch out on either side of the central portion, and at the end of these wings the two arms extend forward thus forming the three sides of the rectangle.

The main entrance, through wide and recessed arches leads onto the hall. A beautiful curving staircase leads onto the upper floors and one can have an unrestricted view of the dome from here. A wide gallery at first floor level is carried on huge stone brackets. Along the walls are arched niches.

After the second floor height, the square base is changed into an octagon, through delicately carved squinches. The long drum is pierced by round arches and tall windows of stained glass. It also has bands of deeply carved design as well as a narrow gallery at the base. The drum is surmounted by the dome. Its construction being absolutely open, the very top of the dome is visible from the ground floor. The stone ribs of the dome can also be clearly seen. The ribbing is filled in with long stone slabs, fitted horizontally—thus giving the stepped effect, also noticeable on the outside.

The facade is naturally dominated by the massive dome. Its ribs are so shaped as to provide a sloping stilt to the dome, and meet at the apex, forming the pedestal for the statue of "Progress". Etched against the skyline, the dome and its colossal statue (16 ft. tall) form an impressive landmark. The fixing of the statue at that height must have presented a tricky engineering problem, which the builders were able to surmount.

The drum carrying the dome is tall, and is supported at the angles by eight buttresses ending in pinnacles. Seen against the dome their effect detracts from the shape of the dome. The ribs carry crocket-like devices, also seen on the gable of the Sailor's Home, as mentioned earlier. The windows of the drum have polychrome arches. The whole effect of drum, buttresses and pinnacles is to give a vertical emphasis to the structure.

Below the drum, the central portion has a large gable, carrying a clockface. There are other domes similar in shape to the big one, but much smaller in size, at the corners on the arms of the building. The slight inward slope at the base of the domes, gives them a superficial similarity to Islamic domes found in the Bijapuri style of the Deccan.

The two arms of the building that project outward are terminated by gables, flanked by towers. The coping on the gables carry similar ornamentation as seen on the dome, and at the Sailor's Home. The flanking towers are also very similar in appearance to those of the previous structure. Here one can

detect a stylistic individuality, or, more correctly, stylistic repetition of individual features.

The profuse carving shows many Indian touches. Birds, animals, foliage, and flowers of India have been used ingenuously. The carving, as is the case with other projects, was mostly done by Indian craftsmen and students of the School of Arts, under the guidance of J. L. Kipling. The statuary is said to have been made in England out of Porebunder stone sent there for the purpose. The female statue of 'Progress' with a lighted torch in one hand, and a spoked wheel in the other, has already been mentioned. There are others representing 'Agriculture', 'Shipping' and 'Commerce', 'Engineering and Science' etc. These are placed on the various gables and have been incorporated into the general decorative scheme. The massive structure and the profuse ornamentation somehow seem to swallow up the statues which become indistinguishable from their background. But all said and done, the V.T. is the most important building of the Raj in the Deccan, if not in the whole country. It symbolizes the totality of the colonial architectural achievement, and embodies the varied phychological and imperial motives of the colonists. It is at once a palace of the new elite and a 'temple' to the ruling class which has brought about this new technology a homage to the new communication system which was to bind the far flung parts of the country closer to the rulers, and be a proud proclamation of the new power. Whichever way one looks at it, it is an astounding structure for a private railway company to erect. In another sense, the V.T. can be taken as the climax, of one phase of building, as well as the 'take-off' point in the search for a new vocabulary.

The process begun by Stevens at the V.T. was further developed by him in two other buildings. One was the Bombay Baroda and Central India Railway (B.B. & C.I.) offices, and the other was a public building—the Municipal offices of the Bombay Corporation, both built almost at the same time.

The Corporation office opposite the V.T. was begun in 1889, from designs prepared by Stevens, who went back to Bath, to do them. However, he came back to Bombay to supervise the work. The resident engineer was an Indian, Raosaheb Sitaram Khanderao.

Placed at an angle, the building faces the circle opposite the V.T. As such, it is in a superb position to show off its elegant dome. Though one may say that it stands in competition with the older structure, it is well able to hold its own. The most important feature of the facade is the huge tower, 235 ft. high and the dome it carries. Rising five storeys, it has an octagonal drum topped by the large dome. The square tower has pinnacles at the corners carrying miniature domed features. Two other domes, on either side of the central gable gives balance to the frontage. The tall central drum similar in structure to that of the V.T., is nevertheless different. It has less Gothic features and more Saracenic ones. There are no

buttresses at the angles of the octagon, nor pinnacles though the mullioned openings have pointed arches.

There is a corbel table below the moulding from which the neck of the dome begins. The curve of the dome makes its outline an ogee. The shape is similar to the earlier Deccan domes, like those at the Jami Mosque at Jalna, or over the tomb of Sultan Ali Barid, at Bidar. (*Mate, 1961-62, p. 24 and pl. VII, XVI*). The domes and the carvings on tympanums, spandrels, capitals and the cusping on the arches account for the Saracenic features, but the Indianness stops there. The central gable, with its allegorical sculpture of 'Urbs prima in India', the windows and the gables of the two wings are decidedly Gothic, and these are the really dominant features.

The plan too, follows the same symmetrical patterns of the other 'revival' buildings. The central part is flanked by two wings, abutting on two streets— Hornby and Cruickshank. The building is thus able to turn the corner in a graceful way. Being three storeys high, it could also accommodate a number of offices, including a large hall for meetings, lit by bay windows of stained glass.

The offices of the B.B. & C.I. were at Churchgate, and the building was constructed during the years 1894-99. Here Stevens was assisted by his son, C.F. Stevens, and by the resident engineer, Rao Saheb Sitaram Khanderao. Thus, the team was almost the same as that of the previous structure, and was able to develop further, the style already begun by Stevens.

The oriental flavour was much more pronounced in this edifice. Faced with the blue basalt dressed and laid in regular courses, the polychromatic effect was created as before in the arch voussoirs which were of white and red stone, and in the column shafts made of the buff coloured Coorla stone. The domes, column bases, capitals, pinnacle tops, and sculptures were all in white Porebunder stone.

Looking at it, the plan is as the usual symmetrical, and the main entrance and porch face the west. The central hall is a square, and paved with coloured marble. The ceiling is of panelled wood. From this hall corridors stretch around the whole structure which extends to north and south of the hall. Two wings projecting both to the west and the east give the plan a shape like the letter H, in which the crossbar is longer than the vertical ones.

The west facade has a central gable pierced by a colossal arch, running up the entire structure and containing the window openings on each floor. This is a singular device to make the structure look lighter. The gables are flanked by square towers. These are terminated by small domes and miniature ones on the pinnacles, in white. There is a statue group over the gable, representing 'Engineering'. There are other gables, flanked by similar towers on all four

sides of the edifice. The gable copings are plain and the domes are set on octagonal drums.

Behind the central gable, the square tower rises to the height of full storey above it. The shape changes to an octagon after this. At this stage, the walls are pierced by tall round-arched and mullioned windows, placed between the buttresses. The pinnacles of the angle buttresses have again the miniature dome motif of the previous building. These are a part of the decorative element, and in their shape and grouping, look very similar to the miniature minarets that surround the Bijapur domes. The central dome is carried on an octagonal drum above this. Again the buttress pinnacles repeat the dome motif and at a distance seem to abut on the main dome. There is a balustrade seemingly wrapped around the constricted base of the dome, forming a decorative element for the neck. This evokes the image of petal ornaments in a similar position on the Bijapuri domes. The shape of the main and other domes is now much more bulbous, and more like the full-blown Bijapur style. The finials also reflect the Islamic influence.

The ceiling under the domes is blocked by wooden panels. The main entrance is deeply recessed, with attached shafts of dark marble. A band of decorative carving along the wall shows Indian animals and birds amongst the Gothic foliage patterns.

Thus, a conscious attempt to Indianize the Gothic style was attempted by Stevens, and though it began with the V.T., it was most developed in the B.B. & C.I. structure. Though in plan and much of its ornamentation it is definitely neo-Gothic, yet it is strangely Indian. This aspect is specially accentuated by the shape of the domes, and the way they are disposed at the various places in the structural schemes.

VI O. SYNAGOGUE

In 1867, the merchant prince David Sassoon donated the money for a synagogue to be built in Poona, near the cantonment, and this structure was designed by Lt. Col. Wilkins of the Royal Engineers. He chose the "English Gothic" style, but the material he used was red brick, with pointings of grey stone. The structure looks unusual, specially in the area, where people are used to stone churches, and it is popularly known as 'Lal Deul'. Facing the east, where a large gable, and a single square tower dominate the facade, its side walls are pierced by a double row of arched windows. These are pointed, with double lights and heavy stone mullions. A decorative corbel table carries an ornamental parapet which hides the pitched roof. The most outstanding feature is however, the west end. It is apsidal, but made up of a number of angular and curved projections, the whole forming a rough semi-circle.

In the front, forming a screen across the lower part of the facade, and extending for a short distance down either side, is an arched verandah, which is entered through the porch.

The inside is very much like a church, with a long nave and arcaded aisles. A gallery is carried on three sides by a row of columns. These have carved capitals similar to those found in the Deccan College. The niche for the Holy Texts is in the apsidal wall, and ornamentation inside is mainly through stucco and paint, while windows are of stained glass filled in geometrical patterns. Outside, decorative elements are to be seen on capitals and corbel tables, mullions and parapets. The Star of David occurs as a decorative motif on the window. The clock tower is topped by an arched pavilion and a spire. It is pierced by narrow pointed openings lighting the staircase within. The campanile-like tower is a major landmark contributing a distinction to the skyline in the surrounding area. The synagogue is a departure from another building designed by the same architect in Poona—the Deccan College.

VI P. CHURCHES

The earliest, most prolific builders of churches on the west coast were the Portuguese. These Roman Catholic missionaries were never too far behind the vanguard of military power and political dominance, and the Portuguese church followed the military drum.

They built many churches, religious houses and seminaries, within their own territories not only in the enclaves of Goa, Chaul and Daman where they ruled for a long time, but also on the islands of Bombay. There were Portuguese chapels, churches, and religious houses at Bandra, Mahim, Parel and Mazegaon.

The British were less interested in proselytization in the early years. The English East India Company, in fact, definitely discouraged missionaries, because it felt that its main aim was to make profits through peaceful trade. Though, the Directors, did try to provide for the spiritual welfare of their employees by sending out Chaplains to the factories, the influence of these men was limited.

It was only after 1813, when the Company Charter was renewed, that missionaries were allowed to come to India freely. This was the result of agitation and pressure and their numbers increased rapidly.

A number of churches were built in the late 18th and in the 19th centuries. These churches belonged to one or other of the various denominations of Christianty—Anglican, Methodist, Baptist, Wesleyan, Roman Catholic etc. There were also churches constructed for the use of various communities—European soldiers, Indian Christians, Indian sepoys and even one for the "Madrassi Christian" community at Poona, as well as civil and military officers.

Some churches were built with government aid, while others were constructed with fonds raised by the congregation.

The criteria for the construction of the churches, seemed to be 'proximity to the congregation.' By the end of the 19th century the number of churches in Bombay and Poona alone seemed to be much larger than the actual numbers of the colonial and Indian Christian community would warrant. This could only be explained in terms of closeness to the congregation, the general idea being that it would be inconvenient for people to travel long distances to attend church. The location of a church was very important and often exercised the minds of the authorities. In one case, the Roman Catholic Bishop requested the grant of a new site for a chapel in Kirkee, Poona, to be located as close to the barracks as possible. The reason for this request was that women could not attend the services in the present chapel because the way to it was "too exposed". (*P.W.D. Gen. File 33, No. 1141 of 1855*).

The churches of Bombay and Poona are not very remarkable for their size or architectural splendour. This is a little surprising when we remember, that the 18th century witnessed the construction of many churches in Europe distinguished for their unique planning. Most of the churches built before the Gothic revival here, were based on 18th century prototypes in England. The most influential of these was the famous church near Trafalgar Square, built by James Gibbs—St. Martin-in-the-fields. (*Nilsson, 1968, pp. 126-127*).

In plan these churches resembled English Parish churches to a remarkable degree, and were often constructed without attention being paid to climatic conditions. Quite often, alterations had to be made later to make the interiors more comfortable. This was particularly true of the neo-Gothic churches. Modifications to suit the climate, were carried out in the great public buildings, but the Gothic churches remained strangely unaffected by this planning. James Fergusson argued for the creation of a new style for churches which would be suitable for the Indian climate. In order to apply the Gothic to Indian churches, he felt that "the aisles of a church must be placed outside, the tracery must be double, and fitted with venetians, and various changes in arrangement must be made which unfortunately the purist cannot tolerate". . . . (*Fergusson, 1873, p. 471*). The purist as anticipated remained unmoved, and the churches continued to reflect faithfully throughout the century, the prototypes built for a colder climate.

These churches were also characterized by their stark simplicity. In view of the fact that the public edifices were enriched by a wealth of carved detail, this is again a rather strange phenomenon.

As one 19th century critic has remarked, the churches were so similar that they might have come together "in a batch from home, nay, it would almost seem that they all came together and the captains in a hurry . . . . had muddled

the numbers, so that A's steeple got stuck to B's tower, and C's columns were wedged into D's facade, for there are some awful misfits". (sic) He goes on to bemoan the lack of ornament and suggests that India is a land where abundant examples of decorative designs are available, and where even the "commonest Sindh-embroidered table-cloth furnishes most admirable suggestions for wall decorations" and where the native workman is quite capable of copying designs. (*Bombay Builder, I, Aug. 5, pp. 25-26*). In a way, one cannot but help agree with the critic of the Bombay Builder. On the other hand, the stark simplicity of the stone built neo-Gothic churches, set them apart from the other buildings being constructed in the 19th century, and gave them a solemnity appropriate for religious observance. The accent here was on serenity and not on the demonstration of power.

Bishop Heber describes a "new Church at Tannah" (Thana) consecrated by him. It was "small but elegant". The Architect was one Capt. Tate, who tried to secure the best view possible externally while "at the same time to observe the ancient ecclesiastical custom of placing the altar eastward". To fulfil his aim he found the novel solution of designing the chancel in a semi circle at one side, faced by a similar projection containing the pulpit on the opposite side, thus forming a short transept. Heber found this arrangement very convenient,—but there seem to be no other such designs extant in the area. (*Heber, 1828, III, p. 128*).

The earliest church to be built by the English at Bombay was St. Thomas', which was later to become a Cathedral. It was originally planned by George Oxenden to suit the needs of a small English community. Oxenden wished it to be like the smaller English churches in size, and without superfluous ornament. (*Anderson, 1856, p. 140*). The growth of the structure shows a varied graph. After Oxenden's death, Aungier took up the project, but after he died, in 1677, it was neglected for thirty years. Its half-built walls remained as they were till the priest Cobbe started a drive to raise funds and finish it, in the early 18th century. The church was finally opened to worshippers in 1718. However, it was altered in various ways and at various times in the following years. (*Douglas, 1886, pp. 85-90*).

In the early paintings, we can see that the original steeple ended in a lantern. Later, an extra storey was added in the form of a clock tower, when it became the Cathedral of the See of Bombay (19th century). As late as the end of the 18th century, it seems that the floors were polished with cow-dung, and the panes were made of oyster shells, 'through which a dim light filtered in'. (*Ibid P. 100*).

The structure is a mixture of classical, crenellated and Gothic depending on the period in which each part was added. Heber found it handsome, as did Mrs. Postans. (*Heber, 1828, III, p. 128; Postans; 1838, p. 36; Picture of the Green with the church and the theatre in 1750, reproduced in Douglas, 1893, I, p. 141*).

An early plan of the church shows a strictly graded seating arrangement, where factors, writers, lieutenants, captains, free merchants, the physician, and even strangers had their allocated places. The Governor, being the highest in rank, had a place close to the apse, having the members of his council next to him. (*Plan of 1768, reproduced, in Gazetteer, C & I., III, p. 242*).

The long nave has two aisles on either side, separated by columns. The west entrance is under the belfry and is flanked by the vestry and a library. The east has an apsidal ending.

During the time of Sir Bartle Frere, in 1864, a comprehensive scheme of renovation was projected. Plans were made by J. Trubshawe, in which we are told "he strived to combine a sufficiency of eastern features and traditions to make it seem at home in a tropical climate". The new plans were made necessary because the prevailing Gothic fashion seemed to make the old church out of date. Lack of proper ventilation was possibly another cause for the projected changes. (*Dart, 1919, pp. 19-21*).

The foundation stone was laid by Frere but within three years the share market crashed, and further work had to be stopped. However, the new chancel had been added, as also the organ chamber, and a fountain outside the west entrance. This was designed by Gilbert Scott, and donated by Cowasji Jehangir Readymoney.

The rather useless feature added also at this time were the flying buttresses. There seemed to have been no requirement for them, because the wall was thick enough to resist the thrust of the groins and indeed, had done so till the buttresses were added. Their purpose seems to be more for the sake of outward form—i.e., to make the church conform to the prevailing neo-Gothic fashion.

The inside is plain, with plastered walls. Columns are massive, but also devoid of ornamented capitals. The roof is vaulted and carried on large stone arches, while the aisles are a series of cross-vaults. The apse has a multi-groined, semi-circular vaulted roof, and the ribs spring from slim black columns and carved capitals. The windows are set with beautiful stained glass. The internal arrangements are spacious and serene, and rather surprising compared with the external effect. Externally, the crenellated structure of plastered brick, with its square tower is a curious mixture of various stylistic elements in which lancet windows look a little out of place.

Two other early churches of the neo-classical types, were St. Andrew's Scotch Kirk, in the Fort, and St. Mary's in Poona. The former was ready in 1818, and the latter in 1825, when Bishop Heber consecrated it. Both these churches have as their prototype the famous church of St. Martin-in-the-field, by James Gibbs.

The spire of St. Andrew's was added in 1823, and from a distance looks like the spire of an English parish church. It was destroyed by lightening in 1826, and the present spire was only built in this century. It has a neo-classical front with Doric columns and a pediment. An early picture shows the church and the street in front of it, and the whole scene looks as if it were in an European city in the early 18th century, and not in tropical Bombay at all. This church has an astonishing resemblance to St. John's Church, Waterloo Road, in London. St. John's was designed by Francis Bedford and has a Doric portico and steeple. However, it seems to have been built between 1822 and 1824, which was later than the date of St. Andrews. The original inspiration for both must have been Gibb's famous church at Trafalgar Square.

St. Mary's at Poona was thought by Heber to have been in "bad architectural taste", in spite of its being convenient and spacious. It seems, that departing from current tradition, this Georgian church had a "blue-wash, picked out in white". (*Heber, 1828, III, p. 119*).

The church is planned as a cross, with a long nave and a short transept. The inside, divided into bays, creates an impression of length not discernible from the outside. The altar is at the east end, from where an arched opening leads to the organ chamber. This is a later addition and spoils the appearance. On either side of the entrance are two rooms, used as vestry and lamp room. The latter contains the staircase of wood which leads upto a wooden gallery spanning the vestibule. Two rows of lofty Tuscan-Doric columns run along either side of the nave. These are plastered with a highly polished lime plaster, (chunam), and look almost like marble. The columns, have unusually high bases which are square on plan. The ceiling is made of wood with decorative mouldings and bosses.

The windows look larger than their actual size because of the addition of rectangular ventilators above them. The clear glass panels let in the sunlight in the mornings and so Venetian blinds have been added. Similar contraptions were incorporated into many classical patterns at other places also, as we have seen.

The external appearance of this church is dominated by the spire which provides the vertical accent. The pitched tiled roof can only be seen when the church is viewed from a distance. The church and its spire is constructed of brick and plaster. The latter surmounts a low tower, square in the first two stages and octagonal on the last. The tower is absolutely plain, and pierced by an arched opening. It sits too low and rather heavily on the roof above the vestibule. (The tower has since been renovated and raised.)

The new features here are the three porches on the three sides of the building. The orders are everywhere Tuscan-Doric and are used in pairs. On the return walls (of the transport) are covered verandahs, obviously to provide a

screen for the walls. The porches have been added on to these verandahs, thus lengthening the short transept arms on the outside and making the structure a regular cross.

Outside the north transept, the columns are on very high pedestals, acting like stilts, because the ground level is low here. The only ornament on the outside are the pilasters, flat and square rising all the way to the eaves. There is no frieze or pediment, only a flat moulding round the windows. The famous Gibb's surroundings in the prototype are absent here. The architect, Lt. Nash of the East India Company was obviously familiar with the book of designs published by James Gibbs, or possibly the actual prototype itself. Simple and capacious though the church is, it is a cruder version of its famous prototype. It is however, in many ways similar to the numerous churches built all over India at this time. (*See Nilsson, 1968, pp. 127-129*).

A new church was built at Byculla, (Christ Church) which was opened in 1835. It is interesting to note that the columns used in the interior were sent out from England, and originally meant for the Town Hall. (*Sheppard, 1916, p. 5*). This church had armchairs for seating and hand-operated punkhas. (*Brown, 1948, p. 66*). There were other classical churches in Bombay built during the first half of the 19th century, but they have either been pulled down to make way for newer structures or renovated to an extensive degree.

Amongst the numerous Gothic churches, the earliest extant one is the Afghan Memorial Church of St. John at Colaba, Bombay. It was designed as a monument to the memory of the soldiers who died in the Afghan campaigns. (1838-43). The money for the memorial was raised partly by public subscription and partly given by the government. Cowasji Jehangir Readymoney also gave a part of the cost of the spire. The architect, Henry Conybeare chose the Early English style and adhered strictly to it. The church was opened in 1858, and the porch was added later in 1865-66.

On plan, the structure is long and narrow, the nave being about 138 ft. in length. Aisles on either side are separated by tall piers with clusters of attached columns. Bosses, shafts, capitals, and arches are of lighter coloured stone. The shafts arise from octagonal bases and end in plain moulded capitals which support the aisle arches.

The aisles are narrow, and lower than the nave, which allows for the provision of clearstory windows. The church departs from ecclesiastical tradition by facing the east—the altar being at the west end. The altar end is not apsidal, and is pierced by a wide and beautiful stained glass window. The ceiling is low-pitched and supported on wooden frames, resting on corbels along the walls. All arches are pointed, and their voussoirs, mouldings, labels, and supporting shafts

are in white stone. The huge chancel arch springs from massive piers attached to the wall at either side. There is a moulding which rises to the level of the capitals, and inexplicably stops short, instead of being continued all around the arch. This gives an unfinished look to the entire arch.

The church is lit by narrow pointed windows and those in the clearstory are filled with stained glass. The eastern end is pierced by a triplet of lancet windows. Externally, the most important feature of the church is the tower. Rising 198 ft. in square storeys it ends in an octagonal spire, with broaches. The east end also has two dominant gables. The highpitched iron roof and sloping aisle roofs are noticeable features. The grouping of tower, gables, and roof lines, forms a picturesque setting and is strongly reminiscent of English country churches. Its high spire is a familiar landmark to all.

The original drawings, made around 1847 for the purpose of fund-raising, show a different design altogether. In the drawing, the church faces west and the axis is north to south, with a tower at the centre dividing the roof in half. The facing gable has a rose window, while arches and windows are unlike those of the present structure. As to why this design remained unexecuted, we connot say, but possibly, these were tentative drawings only for the purpose of publicity. (*Drawing in the R.I.B.A. collection, x 12/2*).

Another church, now a Cathedral was built around the same time at Poona. This is St. Patrick's Church, opened in 1855. The original structure was plain and was renovated and altered in 1871. It was given an elevated nave, and two lower aisles. The original plan was to erect a steeple at the west end. Though the foundations were laid, and the west gable wall was built specially thick (7 ft.) to carry its weight, the steeple was never built. At present, its crenellated gable, pinnacles, and white-washed structure dominates the open areas surrounding it, because it happens to stand at a particularly happy spot, overlooking the open space of the race-course.

Windows are round-arched, and there is hardly any ornamentation. The clearstory windows also have round arches. The structure is simple and almost devoid of architectural detail.

Two elaborate Gothic revival churches were projected in 1865 and 1866. These were the Christ Church at Kirkee and St. Paul's at Poona. The original architect for both was the Rev. Mr. Gell, an archaeologist, who was knowledge-able about medieval church architecture. Obviously his knowledge of archaeology did not equip him suitably to the designing of churches in India. While the building of St. Paul's was in progress, it was discovered to be highly unsuitable for the climate. The work at Kirkee was stopped for a while, but St. Paul's having progressed quite far, had to be continued till finished. The designs for

Christ Church were modified by the private firm of Paris and Molecey and finally it was built under Mr. Howard, Executive Engineer at Poona and Kirkee, at the time. The old plan was changed to include a transept on the north side with an organ gallery above it. On the south side was projected an aisle, protected by a wooden verandah. An octagonal vestry at the east end, detached from the main body of the church was also planned. The bell-turret was to be placed at the crossing of transept and nave, thus obviating the necessity of building a full scale tower. An outside staircase was to be made to reach the organ chamber above the transept. The original window openings being too small, were to be enlarged into doorways—not to be used as entrances, but for the purposes of better ventilation. These would be fitted by wooden lattice-work (jaffri). The open-timbered nave roof was to have dormers to let in light and air. (*Bombay Builder, II, Nov. 5, 1866, p. 105*). This was an interesting example of the pressures under which P.W.D. engineers worked, and how an unsuitable design had to be modified to suit the dictates of climate and budget.

The church at Poona was completed to the original design which was supposed to have been modelled on the famous Sainte Chapelle, in Paris. Like the so called prototype, this church has no aisles. It has an apsidal east end, but the octagonal towers of the prototype are not reproduced, neither are the tall windows. Instead, the baptistry with a square plan is added to the north-west corner flanking the entrance, and an octagonal bell-tower attached to it. The west front has the steep gable pierced by three lancet windows and a stone finial. The dramatic effect of the window group is somewhat curtailed by the pitched roof of the porch added later.

The chamfered buttresses add to the visual mass, specially at the east end. Windows are lancet, set with double lights, and are high up on the walls. The surrounds on the windows and doors, form a decorative element. The grey rubble stone wall is topped by a corbel-table and the steep roof.

Sir Bartle Frere, who laid the foundation stone, had hoped that the design being the "result of mature deliberations" (between Frere, the Commander-in-Chief, and Rev. Gell) "would prove the superior adaptability of Christian architecture, to the necessities of an Indian climate", but we have seen how these hopes were belied. The church was hot, stuffy and dark and when fire destroyed the original roof in 1900, the opportunity, was used to improve the ventilation. The lower openings were enlarged to be made into doorways (like those of Christ Church, above) which could be left open during services. The roof was given dormers for ventilation. Even as early as 1867, the Chaplain complained about the ventilation. The main door had to be left open because of this, with the result that rain lashed into the building, causing inconvenience to the people inside. As a result of these complaints, a porch was added later. Even after the changes, the Canon wrote to the Bishop that the construction of the church was unsuitable

to India. Even lighting was a problem, because the heat generated by burners added to the intolerable stuffiness.

There is a small Catholic church, known as St. Xavier's opposite the cantonment market at Poona, which though built in the neo-Gothic style is quite successful. Constructed in 1865, it was designed by a priest, Rev. Dr. Andrew Schimdt, of the Society of Jesus. On plan it is like a typical English parish church. There are no aisles, and the wide nave is lighted by large pointed windows, with glass panes. The east end is square and pierced by a long stained glass window. This is the most prominent feature inside. Slender mullions, trefoil tracery at the tympanum, and the coloured glass created a suitable background for the original simple altar. The altar end was separated by a wide pointed arch.

Due to an increase in the size of the congregation, it was found necessary to enlarge the church, and this was done by the addition of transepts, making the plan into a cross. The chancel arch was also apparently widened at this time, and a vestry added at the juncture of nave and transept. A small spire, with broaches, was carried on a square tower at the west end, and the material used was grey stone.

There were numerous other churches built in Poona, following the neo-Gothic traditions. The general pattern followed that of St. Xaviers, and in the smaller examples, the tower was often replaced by a simple bellfry, as in St. Andrews (1861) at Vanavadi, Poona. Later in the century, more ornate neo-Gothic churches were built, like the Wesley Methodist Church, Bombay (1890). with its Gothic ornament picked out in white stone, and the Gloria Church in Mazagaon rebuilt in 1913 to replace the 17th century Portuguese church of the Franciscan order, known as Nossa Senhora de Gloria.

VI Q. DOMESTIC ARCHITECTURE

The domestic architecture of the British colonial community in India is a valuable social and historical source which reveals the development of the colonial culture, as well as its influence on the host culture. The types of houses built by them differ in the various Presidency towns, and reflect the social background and aspirations of those who lived in them. There are also differences in town and country houses of the British residents, the town houses of the English and Indians; and in the houses evolved mainly in the suburban settlements by the English army and civilian officer-class,—the bungalow. These patterns again differed naturally from developments in the home country where considerable changes took place during the 18th and 19th centuries in domestic architecture due to industrial and technological advances.

Patterns in British India did not follow the developments in England directly. Since there was no established aristocracy in the colony, their role was played in

colonial society by the government servants. As mentioned earlier, these were generally drawn from the English middle-classes, and in India they formed the ruling class. It was natural for them then, to take on some of the trappings of the aristocrats at home. Both at Madras and at Calcutta, the houses of the civil servants and some merchants, were built in a grand classical style. Whether comprising one or more storeys, they had imposing classical porticoes, and were surrounded by piazzas of the classical orders. In the town the houses were generally of two storeys, while in the country they were usually one-storeyed. (*Spear, 1932, p. 45 and p. 49; Edwards, 1967, p. 45*).

The town houses did not form a part of any conscious design or integrated planning, as say, in Nash's terraced housing in London. They arose naturally, each isolated in its own garden-compound, and forming broad but slightly irregular streets. Their size and designs link them more to the English country houses of the aristocrats rather than to the 18th century houses of urban London. Those who lived in these houses were criticized for snobbery by contemporary travellers from home, who thought them to be "aping their social betters".

In Bombay, within the fort area there were some Georgian 'palaces' in the 18th century. (*Kincaid, 1973, p. 319*). However, not much evidence regarding this type of house is available. The larger town houses possibly resembled the Governor's residence on Apollo Street and the Admiralty House. Whether the houses had classical porticoes or were at all architecturally similar to the houses in Calcutta is not definitely known. A perceptive account is given by James Forbes, writing in 1766. According to him, Bombay houses were not as large or elegant as those of Calcutta or Madras. But they were more comfortable and "built in the European style, as much as climate would admit of ; but lost something of that appearance by the addition of verandahs or covered piazzas to shade the apartments most exposed to the sun". (*Forbes, 1834, I, p. 96*). The antecedents of the town houses of the rich merchants were possibly Portuguese. Patterns laid down by the latter in the early settlement were continued with alterations and modifications due to climate conditions. One account says that a lot of timber was used in the wooden framed roofs and on the verandahs. The houses had pitched tiled roofs which made them look different from those in the other Presidency towns. More than one traveller emphasizes the fact, like Forbes, that though they were not as splendid as the Grecian villas of the latter, they were more spacious, comfortable and better adapted to the climate. (*Valentia, 1811, pp. 169-170; Heber, 1828, III, p. 131*).

From early paintings of the fort, we can make out that the houses were generally double or more storeyed with stuccoed pilasters, large windows, often shaded with blinds and tiled roofs. They do give the impression of being spacious inside without being grand.

Some of the homes raised by the wealthy Indians were however rather

grand. One such house was Fort House belonging to the Jeejeebhoys. (It is still extant and now accommodates the State Handloom retail shop). Its impressive facade has a neo-classical pediment and a terraced portico, supported on double-columns which form a shaded loggia on the street below. Windows are large and rectangular with an accentuated cornice.

There is also the Esplanade House of the Tata family with its Corinthian pilasters and ornate facade. However, it has been built around a courtyard like indigenous residential houses. This makes it somewhat similar to the westernized palatial houses of the rich Indians in Calcutta. Both the Fort and Esplanade houses date from the 19th century when their owners took up residence in the southern areas of the fort.

James Forbes' own house at the edge of the Fort was not very different from Hornby's House (Admiralty House) and others as seen in contemporary paintings. (*See plate 55; a water colour of Forbes' house can be seen in the Bhandaji Lad Museum, Bombay*).

By about 1770, English merchants began to develop the taste for country-residences outside the Fort. The houses that came up along Backbay, Malabar Hill etc. were large and comfortable. They were probably more on the 'bungalow' pattern with pitched roofs and were generally one-storeyed. (*See below, 'Bungalows'*). Some were double-storeyed and large. A very clear picture does not emerge, as to the exact nature of these country-houses. We have some names which have come down to us—Westfield, Non-parell, Ridgeway Cottage, Huntley Lodge, Somerville Lodge, The Craig (Mazagaon) etc. These names evoke the country mansions of England and perhaps express the nostalgia of the colonial exile. One such house was the "Beehive" at Breach Candy, where Mrs. Elwood resided for a while. Another was "Belvedere" at Mazagaon, the residence of the celebrated Eliza Draper. It stood on a rock overlooking the sea and had an arcaded verandah all around the house with an overhanging tiled roof. (*Sketch in Douglas, 1893, I, p. 431*). We know that though it lay shut up and neglected for years it was commodious enough for the Government to take it over on lease for using it as the Sadar Adalat (Courthouse). Later it was planned to use it as a European hospital, but since medical opinion found it to be an unsuitable area, the scheme was abandoned and it was given to a religious order. (*P.W.D. Gen. File 1984*).

In the early 19th century, the fashionable European suburbs were Mazagaon, Malabar and Kambala Hills, Byculla and Parel. We hear of 'The Hermitage' on the road to the Breach, as also of 'The Retreat'. Wellington stayed in a house called 'Surrey Cottage'. Some wealthy Indians also moved out of the Fort and built some large double-storeyed houses at Mazagaon. The Wadia family home was called 'Palm Green' or 'Tarala' and was hired by the Recorder, James Macintosh for a few years. Like many other old houses, this has also fallen to

the demolishers' bulldozer. It was a double-storeyed and rather grand house with an eclectic mixture of stylistic ornament. There were wide round arches, balconies on ornate consoles, French windows, long Corinthian pilasters and vaguely Gothic looking columns on the porch. Its rooms were large enough for the building to be acquired by a hospital (*A photograph is available in the Bhaudaji Lad Museum, Bombay*).

In Byculla was the Sassoon's mansion 'Sans Souci' an elegant rectangular block reminiscent of the Nabob's houses in Calcutta, while at Parel the Wadias had two more houses, Lowji Castle and Lal Baug. The Jeejeebhoys owned several successive houses which included Mazagaon Castle. Many visitors, including Mrs. Postans and Henry Moses have described how these homes were furnished with European furniture, Chinese 'bric a brac', and crystal chandeliers.

Some of the 19th century-houses had neo-Gothic facades. Painted arches, carved capitals etc., were used together with pitched roofs and arched verandahs. Towards the end of the century, the decorative elements became more and more profuse. Even compound walls and gateposts acquired these prolific carvings. Amongst the houses built on a classical pattern, the same tendency is seen. Fantastic decoration, curving lines, festoons, and Corinthian pilasters created baroque forms in the houses of both the Europeans and the wealthy westernized Indians.

When Poona became the monsoon capital and an important military centre, palatial residences for part-time use were also built here by the Sassoons (now demolished), Readymoneys, Dadyseths, Jeejeebhoys etc. Built after mid-century, they were mostly Gothic style mansions masquerading as medieval castles. It is rather strange that the wealthy Indians aspired to build grand mansions which were often let out to the English, while the English chose to build less ostentatious bungalow patterns or simpler looking houses.

BUNGALOWS

The most numerous and unique type of dwelling for the Europeans in India, was however, the house-type known as 'Bungalow'. The origin of the word is difficult to trace. It is believed to have been derived from the Hindi word 'Bangla' meaning, 'from Bengal'. This has led to the attempt to trace the antecedents of the bungalow to the typical hut forms of the Bengal villages. (*Nilsson, 1968, pp. 186-187*).

These local huts in the villages of Bengal were constructed mainly of mud and on mud plinths. Roofs were thatched. It was this roof which gave the Bengal hut a distinctive appearance. The framework of the roof was made of flexible bamboo, found in abundance in the area. The bamboo was tied down at

the corners and gave a curvilinear shape to the roof. (Later, the curvilinear form was transferred to brick in the temples of Bengal; still later, the form reached sophistication and beauty when the Moghuls and Rajputs used it to create the distinctive Bangla Chhatri, in stone). Apart from the curving form, the typical 'chalas' (roofs) could be grouped into three major types. The simplest form was the 'Dochala' which was made of two winged portions, meeting at the ridge. The 'Charchala' is an improvement on this. It has four wings rising from the four walls to meet at the ridge, in the manner of an European 'hipped roof', so that the shorter sides form a triangle. The 'Ātchala' (eight roofed) is a further sophistication. This roof is built in two stages, the lower being composed of four narrow sloping roofs placed almost at the middle height of the structure and forming a covered verandah around the house. The upper section covers the top of the walls and is a proper 'Charchala'. (*Sanyal, Temple Promotion and Social Mobility, History and Society, 1976, p. 364*). In the case of the ordinary charchala, the roof was brought forward beyond the walls to form a porch or covered verandah, and was supported on wooden posts.

The bungalows show an astonishing likeness to the 'hut-type' just discussed. Both the charchala and the ātchala forms could be noticed in the roof construction of bungalows. (The older and more primitive ones, had the simple charchala form).

The most distinctive part of the Bengal hut was its curvilinear form. This is not however present in any of the English structures. If the bungalow is based on the Bengal hut, then, the most distinctive feature of the prototype has been discarded in the new adaptation. This probably happened when more durable and solid wooden beams were used instead of the supple bamboo for the roof.

Typically, the bungalow was square or rectangular and raised on a high plinth, like the indigenous village hut. The high plinth also corresponded to contemporary colonial ideas of safety and health. (*King, 1976, p. 136*). The thick walls, were shielded from the sun by verandahs on one or more sides. The most striking resemblance to the Bengal hut, was the roof, formation. The early bungalows had the four-sided roof, which was brought over the walls to protrude over the verandah or raised plinth. It was supported on wooden pillars or posts. In bungalows, built later, the roof was broken into two parts. The verandah roof, sloping against the house, mid-way up the walls, was narrower than the main pitched roofs which covered the living rooms. The pattern was again strikingly similar to the 'atchala' type, but without the curvilinear shape. This double roof proved to be remarkably suited to the requirements of the Europeans, as it could be used to cover a high-ceiling but single-storeyed structure, spacious and cool at the same time.

Thus, whether the adaptation is consciously derived from the Bengal hut, or from the common village huts, of other areas, or whether the bungalow is an

unconscious evolution of design which best suited the climate, there is no way of knowing now. However, some other factors also may have played a part in the development of this house type.

The English cottage had a highly developed form upto the 17th century; with the advent of industrial technology and consequent urbanisation of society, the cottage architecture had lost ground in England. However, when the 'Romantic' movement began, there was a reaction against the whole process of industrial modernisation in the 19th century. The interest in domestic cottage architecture was revived. This (domestic cottage architecture) was now looked upon as picturesque and romantic. (*Nilsson, 1968, pp. 186-189*). The bungalow could definitely be included in this category of 'romantic cottage dwelling', and this may explain partly the interest of the Europeans in continuing to live in it, and constantly improving its design.

The colonial bungalow became a type of universal accommodation for the colonial community all over India and in fact, colonial residences in Africa and the far east were called by the same name. (*King, 1976, p. 123*). These dwelling houses varied in the details of plan, ornament, size and height in different areas where they were located, but basically the pattern was the same. A single house generally rectangular, on a symmetrical plan, and with a prominent tiled porch was situated in its own garden or compound, surrounded by walls or hedges or both, and was thus shielded from the road. The house was approached by a curving or straight drive, and had accompanying structures which served as kitchens, stores, offices, stables and servants' quarters. In the early days of its evolution it also had its own source of water in the form of wells, and a large surrounding area to grow vegetables and flowers. Since most of the needs of the residents were met within the enclosed area, they formed self-contained units within which the European families lived out their social and cultural lives. As such, it was a uniquely adaptable structure and could be constructed in town, suburbs or country. It could also with slight modifications be used as rest-houses, circuit-houses, offices, barracks etc. It also had the added advantage of being relatively cheap and was easy to construct.

As regards the ground plan of the bungalow, this also showed great variety within its general characteristics. Plans were mostly symmetrical. The front of the house had a covered porch, for the convenience of residents and visitors. From the gate of the compound the drive curved towards the house, situated generally in the centre of the compound. Sometimes there were two gates, and a semi-circular drive connecting them. The compounds varied in size, and according to the status of the resident. For senior officials of the colonial government or army they sometimes went up to 15 acres. (*King, 1976, p, 132*).

Behind the bungalow in a detached structure was the kitchen, connected to the back verandah or pantry with a covered passage. Servants' quarters, stables,

BUNGALOW LAY-OUTS
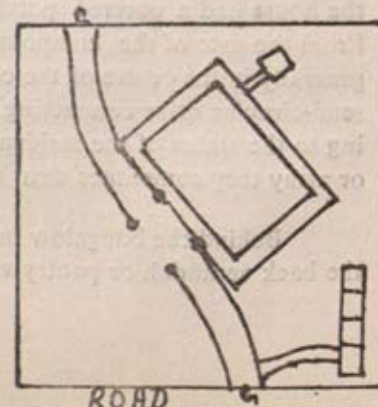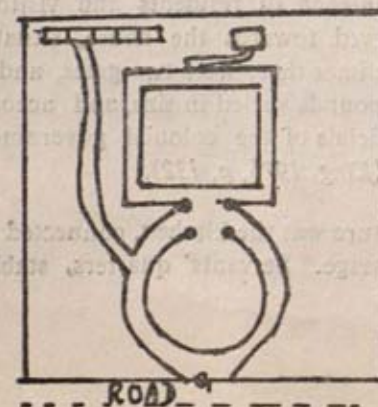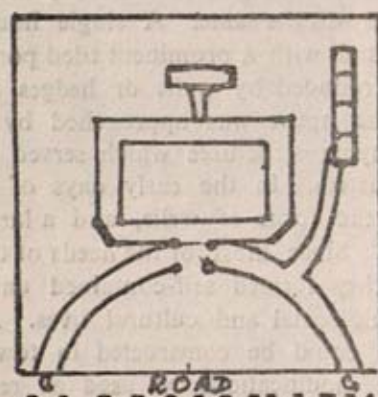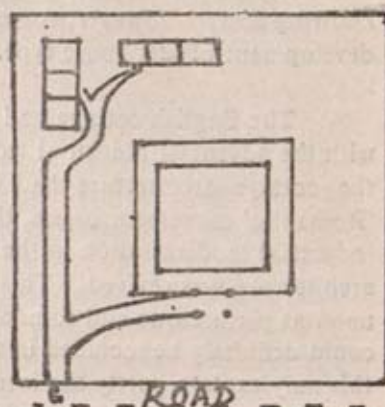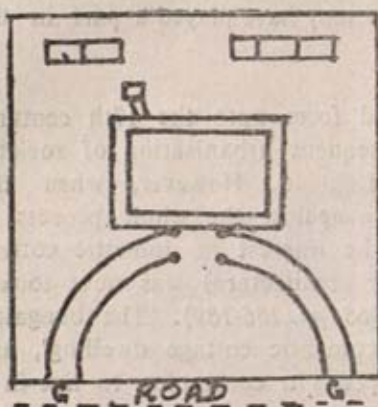
store rooms etc., were situated in long rows behind the house, at the edge of the compound. In the mofussil area, the compound also accommodated offices, where the resident could carry on his official duties. Such bungalows, often dating back to the last three decades of the 19th century still exist, though precariously and under siege from speculative building contractors, in Poona and Ahmednagar cantonments.

In front and around the house, the gardens were laid out with trees, shrubberies and lawns, and flower beds in geometric patterns, evocative of gardens in the home country. Compound wall, shrubberies, trees and long driveways, not only ensured privacy but also created an exclusive domain or setting for the colonial officers to carry on their culture—specific activities. The compound and garden also provided coolness and scenic beauty, the perception of which was culturally important for the Europeans. (*King, 1976, p, 132*). Besides all this, land was available in plenty, servants and labour was cheap, and so they could afford to adopt a life style similar to that of the rural elite in the mother-country, whom they looked upto as socially superior.

Bungalow plans were devised totally to suit the living patterns of the Europeans. The space inside was divided into a number of rooms reserved exclusively for the performance of different functions. The dining room, sitting room, bedroom, study room, etc., were specially demarcated areas to be used for special functions. This was in marked contrast to the host culture. (In Indian homes, functional use of internal space was not so strictly demarcated, and the same space often was used for a variety of functions). The bedrooms were either at the corner of the bungalow or behind the sitting room, so that they would be out of the way of strangers, and afford utmost privacy. The sitting room was accessible straight from the verandah which was reached through the porch. Sometimes there was a hall which led off to the drawing room. The dining room, also in the first tier of rooms had to be accessible from the kitchen, so it often had a back door leading on to the verandah in that part of the house, which could be reached from the kitchen. Usually a covered pathway was provided for this purpose. Kitchens had to be away from the house and at the back, so that smoke from coal fires and cooking smells did not disturb the residents. Sometimes there was a pantry between the dining room and the back verandah. The dining room was often an extension of the sitting room and divided from it by an arch or by curtains, or both. Bedrooms had attached dressing rooms and bathrooms.

The verandah, the most versatile part of the house, was used as an extended sitting room and was furnished with chairs, tables etc. It was also the place which visitors or strangers entered first. In the rainy season, it afforded a dry walk for exercise. Often decorated with potted plants of various types, it was also a garden-cum-green house. Tradesmen would be received here, and given a place to sit and make by hand the goods required by the resident or render other services. The tailor, the cobbler etc., would sit here and make the clothes or stitch the shoes under the watchful eyes of the customer for whom they were being

BUNGALOW PLANS
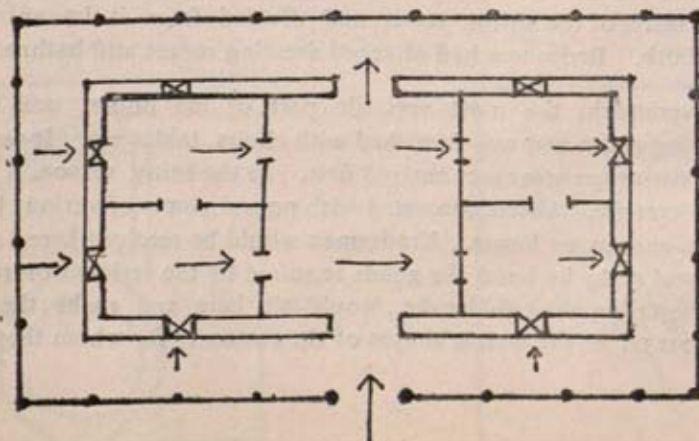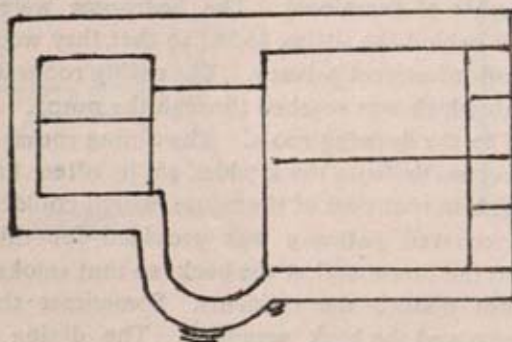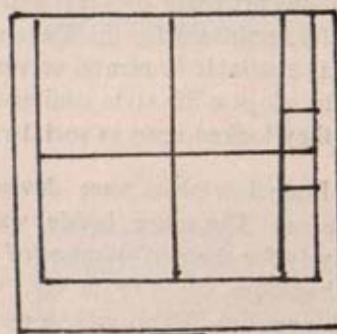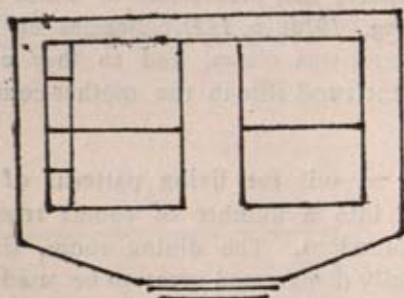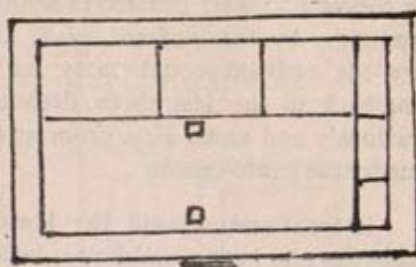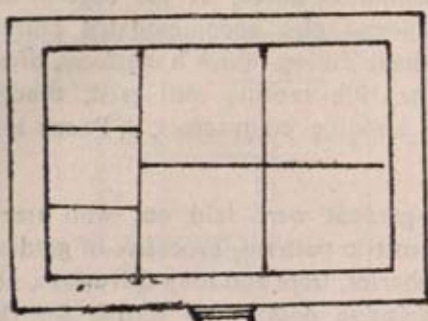
CIRCULATION OF AIR INSIDE

made to order.   However, the most important function of the bungalow verandah was to shield the inner rooms and walls from the direct rays of the sun, but at the same time to admit air and some light.   Together with thick walls and high ceilings, the verandah provided the resident with an effective means of climate control. The inside of the bungalow was cool even during the hottest of seasons, and neither the morning nor afternoon sun, was able to invade the inner sanctum of the colonial bungalow.   Another devise bringing most relief from heat was to place doors and windows opposite each other and thus facilitate air circulation.   This had the advantage of catching any breeze, from any quarter and sending it around the inside of the house.   Draughts could be excluded by the simple measure of shutting the appropriate door or window, and opening another in a different direction.

As regards sanitation, there were narrow paved drains running all around the raised plinth of the house. Washrooms, and privies had sloping floors with narrow outlets for water. Till the end of the 19th century, dry sanitation prevailed in the bungalows and night soil was removed manually by sweepers who lived on the premises in their separate quarters.   The water closet and the septic tanks were innovations introduced in most places at the beginning of this century.

When the punkahs came to be used widely in the residential bungalows, they were fitted on poles to the ceilings, and holes were made in the walls to let out the attached ropes. Pulleys were fixed below this hole. This enabled the 'punkah boy' to manipulate the devise sitting outside the room on the verandah, thus ensuring privacy to the inmates.

Bungalow floors in Poona and Ahmednagar were paved with large slabs of unpolished stone.   The ceilings formed another interesting element.   In the early bungalows, there was no false ceiling covering the wooden framework of the thatched or tiled roof, but later on, cloth was tacked on to the framework, and whitewashed over, in order to give the impression of solidity.   The limewash was detrimental to the life span of the cloth, which had to be frequently changed. If the rafters and beams were of good quality wood and neatly shaped, they were sometimes polished and allowed to remain uncovered.   Planked wooden ceilings were common in the later houses, specially the large bungalows of senior officers. In the mofussil areas, the wooden beams were often just round tree trunks, and treated with insect resistant lac.   They gave an uneven and crude look to the framework, and therefore the expedient of covering them with cloth was resorted to.   Many old bungalows in Poona and other areas of the Deccan use these cloth ceilings till today.   The roof was supported by a wooden framework.   The elements of the framework consisted of rafters, placed on 'king-post' or 'queen-post' type roof trusses.   Over the wooded rafters were laid thin sheets of bamboo matting. This was weighted down and fixed in place by thin strips of bamboo laid close together.   Over this the semicircular country tiles were laid cupping into each other, in two layers.   For extra protection, four layers were sometimes

used and the end tiles were fixed in place with cement plaster. This method seems rather flimsy today, but it was effective in preventing leakage even during the heavy monsoon of Bombay. However, the clay of the Deccan being of poor quality for use in terracotta, the tiles cracked often and had to be frequently replaced.

In later years, refinements were added for aesthetic values as well as comfort. Many of these later bungalows of the 19th century are still extant in Poona and Ahmednagar. Verandahs were beautified by the use of neo-classical columns, usually the plain Tuscan-Doric. Arches and entablatures were also added. The wooden posts supporting the verandah roof were thus transformed into columns. In Poona, specially, the verandahs acquired trellis work screens, transforming them almost into arbours. The brick and plaster walls remained however, though boarded ceilings were introduced in some cases. Skylights were pierced in walls between the two roofs and acted like clearstory windows to the main rooms which had become dark and gloomy due to the high ceilings. The glass paned skylights could be opened and shut by means of a cord tied to them on the inside. Sometimes they were shaped like fanlights. Windows were enlarged and fitted with glass panes. They were beautified by arches, and mouldings. A large number of doors were also added, with fanlights and glass panes. The roof was hidden behind a balustrade, often decorated with urns. Dormer windows were added to the roofs. In some later types, a square or octagonal glassed opening like a lantern was put at the centre of the ridge to light the central room inside.

Interiors of Bombay official's bungalows were generally furnished by the P.W.D. and as a consequence all looked similar. The central drawing room was supported on pillars and often divided into two by a large arch. The nostalgic associations were heightened by the addition of fireplaces and mantel shelves. These could have no useful purpose in the climate of Bombay, and were indeed not actual fireplaces at all, but little niches in the wall, for decorative purposes. The mantel was a reminder of the cold English climate, and home, and served to indentify the geographical and cultural roots of the residents.

Travellers from England have left their opinions about the aesthetic appeal of the bungalows. The single-roofed bungalows showed too much roof and reminded visitors of English barns or 'cowhouses'. (*Kincaid, 1973, p. 157*). Maud Driver makes an interesting observation in which the real value of the bungalow as a form of domestic architecture was brought out. "In the first place an Indian bungalow is as exquisitely simple in construction as an English house is complex. It is not built to please the eye of man, but to shield his body from a merciless sun; this it does far more effectively than an average English house shields him from the cold". (*Maud Driver in Brown, 1948, p. 72*).

Mountstuart Elphinstone described his residency or bungalow at Poona, "as a tiled palace on wooden posts, 12 ft. high", and not "traditionally magni-

ficent", The accent was on comfort and not grandeur. (*Kincaid, 1973, p. 172*). Henry Moses described his friend's bungalow in Colaba as an octagonal one, in which "from whatever quarter a stray breeze might come, you could open the venetian shutters and admit it at once". His perception of its beauty, includes a long garden vista of the 'scarlet-flowering acaccia trees' (*Moses, 1850, p. 53*),

Thus, the bungalow, though borrowing heavily from the outward forms of indigenous huts, evolved into a uniquely European house, specially suited to the cultural and social life styles of the colonial officials and afforded an effective means of climate control to them.

CHAPTER SEVEN

ANALYSIS

Having discussed the general the characteristics of the individual structures, it is now necessary to analyse and scrutinize the details. These include the decorative details both inside and outside the structures which helped in giving them their distinctive stylistic garment. The various types of materials used for the construction also need to be separately mentioned. With the advent of industrial technology many synthetic products were used, including pre-fabricated parts which were imported from England. The men who were most responsible for the design and construction of the individual structures have also to be specially noticed. Their training and whether this prepared them or not for the job at hand, the system within which they had to function, and the participation of Indians in the constructional process need to be analysed as well.

VII A. ORNAMENTATION

Surface decorations on the colonial buildings were mainly in the nature of stone carvings, stucco-work, or polychromatic effects achieved by the use of coloured stone. Texture was also used for decorative effect, with the juxtaposition of smooth dressed stone and rubble or rusticated masonry.

The neo-classical structures were without much surface decoration, and severely plain but white 'chunam' surface, the fluted columns, the entablatures and pediments were treated as decorative elements themselves. Palmettes and other neo-classical ornaments were sometimes seen, as in the space between the mutules at the angles of the cornice, and also on the wooden jhilmils of the Town Hall. Animal masks as rain water outlets are sometimes used, like the lion's heads on the same structure.

The neo-Gothic structures gave ample scope for decoration. Columns, capitals, arch-mouldings, corbel tables, turrets gables and buttresses could all be

used as ornamental additions. Sculpture was also used liberally in some build-ings. The Indian stone-carver was already adept in this field, and with designs supplied to him was able to reproduce the various motifs of the Gothic revival. Some of the carvings were done by the students of the School of Art. Under J.L. Kipling efforts were made to render local flora and fauna in stone, and integrate these with the Gothic ornamentation and style. Thus we have the Indian Castor-leaf motif, and animals like the monkey, hare, peacock, and fox amidst the foliage on the capitals, tympanums and spandrels of the Gothic buildings. But the original decorative designs are also reproduced wherever possible. We often come across the dogtooth, and the chevron on capitals or on the intrados of arches. The stiff-leaf capital is also common. The ball-flower placed on the capitals is found in the Deccan College.

A noticeable feature is that the decorations on the Poona structures are rather subdued. Capitals, mouldings and tympanums are not as profusely decorated as the structures at Bombay. The polychromatic effect is also missing from the Poona buildings. Except for the Council Hall, and the Synagogue, both of which are constructed of red brick combined with stone in columns and mullions, the general effect in Poona is a sombre and grey one. Full play is given to the craftsman in Bombay.

Briefly narrated, the common features of the carved ornamentation are as follows:—

CAPITALS

These were profusely carved in almost all the Gothic structures in Bombay. The most common was the stiff-leaf decoration and the crocket ornament. (e.g. Senate Hall, Municipal building, the Victoria Terminus). The capitals on the short columns of the porch at the School of Arts, have a trumpet-shaped flower incorporated into the outward turning crocket shape. Figures of Indian women and animals such as the rat and hare are worked in amongst the foliage. The capitals on the columns of the western corridor of the High Court, display not only originality but also a sense of humour. (Already described above, "Law Courts" Chap. VI, vii). Many of the capitals have been rendered in the creamy white Porebunder stone and thus stand out against the darker walls around them.

In Poona, the capitals were less original, and stuck closer to European models. The carvings were simpler, and the stone was the same as those of the column shafts. The capitals at the Engineering College (Poona), specially those inside the main hall, are richly carved. Leaves of the melon, castor-oil, and other Indian plants were represented from models prepared by J. L. Kipling. (*Bombay Builder*, 1868, Oct. 5, p. 122).

ARCHES

Most arches were pointed, with a few exceptions. The former, were either lancet or ogive, and considerable scope was found to make them ornamental. In many of the Bombay structures, the arch voussoirs were given a polychromatic effect. Coloured stone voussoirs were alternated with white or grey ones. In the Secretariat we have red and white; other combinations were grey and white; blue and white; red and buff. Arch mouldings were often elaborate as in the Victoria Terminus, and label stops were shaped into human heads (Senate Hall, Victoria Terminus, Deccan College). In many of the structures, the point of the arch was achieved by the simple process of cutting a notch into the keystone. This was of course against the principles of the true Gothic form, where the arch was created by the meeting of two arc segments, and there were no keystones at all.

Tympanums were used for decorative effect by filling them with fine and intricate carvings. The best example is the Victoria Terminus where exquisite pierced carvings on white stone fill up these spaces. There are magnificent peacocks with their spreading fans; Lyre birds set amongst curling foliage, and on the central facade, we have two egrets pointing their bills at the shield of the G.I.P. Railway Company—all oriental fauna worked with skill into the overall design. A very neat diaper pattern in white, adorns the tympanum of the entrance arch in the University Library. (pls. 71 and 74).

The cusped arch with the multi-foiled openings has been used to great advantage on the upper verandahs of the same structure, and on its spiral staircase. The cusping and pierced foils in white are reminiscent of the Doge's Palace at Venice. Many arches on the facade of the Victoria Terminus, and the Municipal offices are also cusped. These reinforce the oriental aspects of the buildings while they can also be looked upon as a valid form of Italian Gothic decoration.

WINDOWS

These played their part in the overall ornamental schemes. Fenestration was an integral part of the decorative effect. Arched windows with double lights, columned mullions and pierced, quatre, multi foil or trefoil tracery were quit common. The Police Courts and the Victoria Terminus at Bombay, the Council Hall and Synagogue at Poona, and a number of churches at both places have good examples of this kind of decoration. The windows of the Record Office at Poona, have round arches, and the voussoirs are in white stone. The windows on the outer (back) walls of the Deccan College have jhilmils to protect them from the sun and rain. These are a rare features in the neo-Gothic structure. They form gable-like shapes over the windows. Meanwhile, the jhilmil is carried along the wall, taking in all the windows under it. This sloping cover repeats the roof pattern on a very small scale. It serves the purpose of not only protecting the

windows, but also the walls from the strong sunlight, as there are no verandahs on the outer walls of the structure at the back. Further refinements are added, in the shape of wooden barge-boards which are decorated with floral motifs or with pierced designs.

A number of buildings had round or rose windows. The one at the Senate Hall in Bombay is an exquisite example of such windows. The Council Hall at Poona, and the Engineering College hall also have such windows. These were generally filled in with stained glass, which created a church-like lighting inside the halls, when the sunlight filtered through them.

Triple windows, usually narrow lancets were to be seen in many churches. Either all three were of the same size, or the centre one was longer. Such triple windows became the decorative feature, specially on the gabled facades, as in the Afghan Memorial Church or St. Paul's Church (Poona).

DOORWAYS

Some structures have imposing doorways or arched entrances. Most impressive of these is the entrance arch to the Elphinstone College. Deeply recessed, it springs from carved capitals and is wide and striking. (pl. 77). The entrance arches to the Victoria Terminus buildings must also be mentioned. Most churches and public buildings had double or triple sets of arched entrances, with mouldings and label stops, and heavy, sometimes ornately carved wooden doors.

GABLES AND PEDIMENTS

Gables were an integral part of the facade design of the neo-Gothic buildings. The most spectacular of these was the one on the Sailor's Home. Its coping is ornamented by a series of curling crocket-like ornaments which stand out in bold silhoutte against the sky. The top of the gable forms a pedestal for the huge statue of Neptune. Gables also form the perfect backgrounds for the round or rose windows.

The pediments of the neo-classical buildings were generally left plain. These structures depended on their mass and proportion for general effect. In the Record Office at Poona, the pediments provided space for relief sculpture in white stone. These add to the baroque effect and to the aesthetic appeal of the sturcture.

BUTTRESSES

In most cases, the buttresses of the Victorian buildings were used more for effect than structural necessity. Plain or chamferred they heightened the play of light and shade on the structures. This is specially noticeable in St. Paul's Church

(Poona). The flying buttresses at St. Thomas' Church (Bombay) serve on structural purpose, they are the only examples of their kind in the area, and were added on during the second half of the 19th century to 'Gothicise' the structure.

In the Rajabai Clock Tower (Bombay) the buttresses are topped by canopied niches, within each of which is placed a sculptured figure. The gabled canopies are very ornamental and also act as pinnacles, giving added weight to the buttresses.

At the Municipal buildings, and the B.B. and C.I. offices, buttress pinnacles are used to heighten the oriental look, and are in the shape of the typical pointed domes found in the Deccan area.

Buttresses on the drum of the dome at the Victoria Terminus, are crowned by ornamental pinnacles. However, they are not visible from the ground as they tend to merge with the massive dome which forms the background.

OTHER ORNAMENTATION

Decorative carving is used in many other places as surface ornamentation. There is a particularly beautiful panel in a doorway at the University library. It is a strange mixture, and its ancestry can possibly be traced to both Indian and European sources. (Pl. 75) Stone reliefs were much used, and we have already mentioned the focal one at the Crawford Market executed by John Lockwood Kipling. The pastoral scenes he depicted, show an idealised vision of rural life and are in keeping with the Arts and Crafts Movement of William Morris, which was a powerful influence on Kipling.

Sometimes, sculptured portraits have been worked into the decorative pattern, as at the Victoria Terminus, where the Directors of the railway company were immortalized on the facade.

At the entrance to the B.B. & C.I. building an interesting panel carving runs across the walls. Projecting stiff leaf ornament is interspersed with rabbits, monkeys, a mongoose killing a snake, and a bird feeding its young one.

Corbel tables are also worked into the overall decorative patterns. There is a good example at the Deccan College, as also at the Synagogue (Poona) and the Council Hall, all in poona.

The Record Office (Poona) has the unusual stonecut design fixed on the facade at various focal points, already mentioned before. (*See above, Chap. VI, vi.*) (*Plate 37.*)

Projecting semi circular 'balconies' with profusely carved conical bases, are seen on some structures. The porch of the Police Court (Bombay) and corners

of the porch at the Government House at Ganeshkhind (Poona) are good examples of this.

The latter structure also has a row of shields carrying the arms of the various governors, along the facade. The animal heads outlets are beautifully sculptured, and are more like neo-classical gargoyles on the Town Hall (Bombay), than the Gothic forms. Gargoyles are seen on many other structures too. There are very interesting examples at the Victoria Terminus where Indian animals, like the crocodile are given fantastic shapes. However, these have to be specially looked for, as they tend to merge into the general structural background. Garcoyles on St Paul's Church are much more prominent and immediately noticeable.

BRACKETS AND CORBELS

These are essential features of the interiors of most of the buildings. Carved corbels support arches, or ribs of vaulting, and have the characteristic foliage designs. In the University library (Bombay) the window arches are supported by short columns with decorative capitals. The columns themselves stand on corbels, thus acting as separated stilts to the arches. The arches of the porch at the J. J. School of Arts have similar features. (Pl. 81).

The most spectacular brackets and corbels are to be found in the hall of the Victoria Terminus under the massive ribbed dome and the galleries around the hall.

QUOINS

These form a simple decorative element, specially when they are made of different coloured stones. A structural necessity, and introduced by Europeans in India, they are used in a variety of ways. Roughly dressed, they bring a touch of strength to the double-storeyed army barracks. Smoothly polished and of a lighter colour stone, they form a polychromatic edging on rectangular structures like the Record Office (Poona). Sometimes made of the same stone as the main structure they are indistinguishable to the casual observer. In domestic buildings of plain brick or rubble stone, they stand out as the single decorative feature.

STATUARY

Sculpture and statuary was an important part of facade ornament and was often used to crown gables or domes and even pinnacles. The Rajabai Tower, as mentioned before, has the most interesting statues, carved by Indian craftsmen in Bombay. The clothes, stance expression on the faces of the representatives of the different castes show the high degree of skill acquired by the craftsmen in an essentially western form of sculpture.

The dome of the Victoria Terminus has possibly the largest statue, over sixteen feet high, of 'Progress'. There are others crowning the various gables on the sides of the building. They represent personifications of abstract ideas, 'Agriculture', 'Shipping and Commerce', 'Engineering and Science' etc. These are not placed so as to draw attention to them, and generally merge with the background and other ornamentation. They only serve to increase its ornate look. The five main statues were sculptured in England and shipped to Bombay. But some of the other sculpture and the bas reliefs were created by Indian craftsmen under the supervision of the students of the School of Arts.

There is a rather impressive representation of "Urbs Prima in India" on the Municipal building, while the statue of Neptune, on the gable of the Sailor's Home it etched against the skyline. The High Court also has a statue of Justice in a prominent position on the facade. Most of this statuary was again imported from England where they were made at one or other of the well-known studios. The statue depicting "Engineering" on the central gable of the B. B. & C. I. building was, for example, supplied by the studio of Roscoe Mullins in London.

Though statuary was widely used to enhance the decorative effect, they were usually placed too high up on the facade to be fully appreciated. At the most they stand out in silhouette and help to emphasize the skyline. This is the case even with the gigantic statue atop the dome of the Victoria Terminus. Only in the case of the Rajabai Tower, do the statues add interest and create a focal point, while also adding to the richness of decoration. Even so, the ones placed at the top of the tower near the cupola cannot be seen at all from the ground, and do not serve any structural or visual purpose.

The above general description will show that in the field of decorative carving Indian stone cutters and artisans played an important role, and were possibly allowed a certain amount of free expression in a craft at which they excelled since ancient times. They also proved highly adaptable as they were able to execute designs which must have been quite foreign to them.

VII B. MATERIALS

Stone—The Bombay-Poona area had an abundance of different types of stones. It was obvious therefore that this should be the principal building material. The stone also lent itself to manipulation in the neo-Gothic revival style chosen for the buildings in the late 19th century.

The area had an underlying layer of basalt rock. The quality of this rock was thought to be very good for building purposes. The basalt was available in many colours, grey, blue, yellow and red. Granite was also to be found in good quantities. (*Cantonment Gazetteer, G. E. Poona, 1979/80, p. 9*). The quarries

for this stone were mainly found near Yeravada and Chinchwad where an abundant supply of rubble was also available. (*Ibid, p. 24*).

For the polychromatic effect of the Gothic buildings, coloured stones were also brought from nearby areas. The white soft stone from Porebunder, was useful for carvings, sculptures and mouldings. It stood out dramatically against the dark grey or blue basalt backgrounds. A straw or buff coloured trap stone was available at Malad, while milky white siliceous sandstone was often used for the arch voussoirs. Yellowish sandstone from Coorla was used in a large number of buildings.

Murum—A type of crumbled trap, was found in surface layers in the higher and rocky areas of the Poona Cantonment. Murum was used for constructional purposes. (*Ibid, p. 9*).

Sand—Fine sand was available in the surrounding areas, specially at Koregaon, eight miles from Poona. In Bombay too, sand was available. However, this was not of very good quality. When high quality sand was required, it had to be brought all the way from Gujerat (Ahmedabad) or Sind (Karachi). This was the case, when the experiment of producing Ransome's stone was made.

Lime—was available abundantly in the Poona area where there were lime kilns near Parvati Hill and in Pashan. Bombay probably got its lime from other areas in the Gujerat hinterland. (*Ibid, p. 24*).

Timber—was an important building materials, as roof frames and ceilings were mainly of wood. This came from the forests around the ghats and Bombay, Poona and Ahmednagar had an abundant supply of it. The logs were specially treated to make them resistant to white ants and other insects.

Bricks—A few public buildings, specially in Poona were constructed of bricks. Bricks were also used in some early buildings in Bombay. Bungalows were almost exclusively of brick. Brick constructions were generally plastered with the blinding white lime or chunam to hide the brick work and make the structure look as if it were made of marble.

Sometimes as in the case of the Council Hall and Synagogue, the natural brick colour was allowed to show, and was even enhanced by colouring them in brick red from time to time.

Brick kilns were also to be found at Parvati and Pashan (*Ibid, p. 24*). Thomas Williamson describes the old sun-dried bricks and how they were made. (*Williamson, 1810, I, p. 515*). The old Indian bricks were much wider than the present day, and much thinner. The general size was about one foot in length,

six inches in breadth and three inches in thickness. Some old bungalows built with such bricks still exist. (*Ibid, p. 514*). It was only later, that baked bricks of the modern size were produced. This was according to the specifications of the English who used bricks with the standard size of $9'' \times 4\frac{1}{2}'' \times 2\frac{1}{4}''$. English bricklayers in the Company's service taught the new brick making techniques to Indian brickmakers. (*Nilsson, 1968, p. 168; Cantonment Gazetteer, G. E. Poona, 1979/80, p. 9*).

Tiles—The early structures were all roofed with the semi-circular or cylindrical tiles, known as 'country-tiles'. These were made by brickmakers and baked in kilns. (*For the process of shaping, see Nilsson, 1968, p. 168*).

The flat tiles soon started to be made in India, following English patterns and specifications. The old country tiles were found to be too light and porous, and a constant source of expense, because of frequent need for maintenance. They were so light, that "crows remove and displace them" (*P.W.D. letter to Home Government, Feb. 1871*). An English firm, Taylor's supplied their patented tiles for the Secretariat and other new buildings. These were said to be a great improvement because, not only were they adapted specially "on account of their appearance, to architectural buildings, but they will last for ever and require no repairs of any kind, and will stand any amount of wind and rain". (*Ibid*).

Tiles from another firm, "Maw" were also imported for some buildings, specially the Post Office, in 1873.

Felt—The leaking of tiled roofs was always a problem and an experiment was tried in 1856 at the Ghorpuri Barracks, and at the sanatorium in Purandhar. A special type of felt, "Croggans" patent, was placed between the tiles and the frame, and found to be successful. However, there are no more references to this anywhere else. (*P.W.D. Gen. 33, of 1856, 1163*).

Bamboo, leaves and thatch—Bamboo was mainly used in the construction of tiled roofs. Bamboo matting or 'chatai' was laid on the wooden frame. This was weighed down with strips of bamboo laid across, horizontally, and over this the country-tiles were fitted length-wise from roof-ridge to eaves. Sometimes teak leaves or thatch was substituted in place of the chatai to prevent leaks and provide a base to hold the tiles. In the earliest times, coconut leaves were often used as roof covering.

Corrugated iron—was used instead of tiles on many public buildings of the late 19th century. But the rain and humidity made their condition deteriorate quite fast, and they required repainting at least once in three years. This turned out to be quite expensive for the government, specially as the initial cost of putting up iron roofing was in itself much higher than tiled roofing. (*P.W.D. Letters to Home Govt. Feb. 1871*).

Course cloth or jute sacking—was used in ceilings in bungalows and barracks to hide the rough wooden framework and the underside of the tiled roof. The cloth was whitewashed to give a lighter appearance to the interiors.

Iron work and decorations—were imported generally from England. These included the iron girders and meshed iron frames for houses of the later 19th century. Wrought iron finials and decorative iron works for roof-ridges were also imported.

Stone slabs—mostly from Shahabad were used as flooring for many structures. We hear of a firm 'Minton' from whom floor tiles were ordered for the Victoria and Albert Museum. (*P.W.D. I of 1870*).

Artificial Stone—Around 1867, a private company wanted to carry out an experiment in the making of artificial stone. The government of India decided that this should be done in Bombay, and the new patent stone should be used in Bombay buildings. The protests of the Bombay government, that it did not require artificial stone, because the natural variety was so freely available went unheeded. One Mr. Pye-Smith set up a factory in Bombay and began to produce the stone. However, it turned out to be a very expensive experiment, as the fine sand required was not available and had to come all the way from Gujerat or Sind and the chemicals had to be imported from England. The work was often stalled when the materials ran short, and the final product cost more than the natural Porebunder stone. The new stone was used in the Secretariat, new Post Office and a high school in Surat. It was of good quality and could hardly be distinguished from natural stone.

Water closets—were introduced in the second half of the 19th century. McFarlane's patented water closets were indented for the Secretariat in 1875. (*P.W.D., letters to Home Government, May, 1875, 16*).

VII C. THE BUILDERS—ENGINEERS, ARCHITECTS AND CONTRACTORS

Upto the 19th century, there was no major difference between architects and engineers. The former designed as well as constructed structures like bridges which later became the speciality of engineers. (See above Chap. IIC, Antecedents). Even the well informed layman could discover in himself designing talents with the help of the widely circulated design books. On the other hand, "any man—soldier, sailor, trader, parson or doctor could become an engineer if he had the practical ability, and more than an average share of common sense". (*Sandes, 1933, I, p. 1*).

The earliest builders in Western India were not even proper engineers. They were 'gunners' or artillery men, without training or experience in construction

work. They were called upon mainly to erect the early fortifications and warehouses, residences and the occasional church. Through trial and error these utilitarian structures were raised (*Sandes, 1933, I, p. 3*). But costly mistakes were also made which led the Presidency Government to finally ask for proper engineers to be sent out as early as 1668. (*David, 1973, p. 264, also see above Fortifications*). The Company got over its initial reluctance to spend the extra money and in 1671 one Capt. Herman Bake was appointed the first Engineer and Surveyor-General. (*Sandes, II, 1933, p. I*).

During most of the 17th and 18th centuries the Company's engineers had little technical training. Whatever training they acquired was of a military nature, specially artillery and engineering skills required for fortifications and other defensive arrangements. Finally the Company started its own military academy in 1809. A school of Engineering was set up at Chatham in 1612, to train the officers of the Royal Engineers in "the duties of Sapping, Mining and other Military Field Works". Sir Charles Pasley, R. E. was the head of this institution. The school supplied engineers to both the king's army and the Company's army, but these had little knowledge of civil engineering, and none at all about conditions in India. (*Ibid, II, p. 348*). It was not till 1822 that an engineer (Pasley) from India became its head, and the cadets received some idea of the place where they would have to work. In 1826, Pasley wrote a book for the guidance of the junior cadets who were to be sent out to India. (*Nilsson, 1968, p. 156*). Finally in 1872, a college for the Royal Indian Engineers was begun at Cooper's Hill, near London, and was administered by military engineers from India. (*Sandes, 1933, II, p. 349*). These trained engineers were competent at field engineering and fortification and had also acquired knowledge of the constructional aspects of building. It was from amongst the Cooper's Hill trained men that engineers for civil works in India were drawn.

The Public Works Department was created for the first time, just before the uprising of 1857. Civil engineers from England now entered the service in large numbers, and the military engineers began to be diverted towards military projects—like the building of cantonments. In western India, the military engineers continued to design as well as build for the P. W. D., well into the 19th century. However, to supply lower level officers to the P. W. D., it became necessary to recruit Indians into the department. Engineering Colleges in India were founded in the second half of the 19th century, at various places, including one at Poona. The Indian recruits were associated with the senior engineers in the projects of the P. W. D. It was only in the last four decades of the 19th century that the advantages of employing professionally trained architects for western India was realized by the government and some of them were employed specifically for the various projects, or asked to submit designs for public buildings.

The early engineers may not have been fully conversant in the architectural

styles prevalent in Europe, but they were obviously guided by a variety of books which carried the designs of the most popular architects of England. Handbooks and treatises also served as guides, such as Gibbs' "A book of Architecture" Ruskins, "Seven Lamps of Architecture", and the design books of Stuart and Revett (*Nilsson, 1960, p. 157*). When the engineering colleges at Bombay, Poona and Karachi sought permission to include a certain textbook in the course, (Mahan's Elementary Course of Civil Engineering") they received the qualified approval of the Superintending Officer. The schools were warned that in the hands of a judicious teacher, the 16 year old text book would be an useful classbook, but since the practice of civil engineering had advanced considerably, the practical instructions in the book would have to be modified,—"the practice of civil engineering in India cannot safely be taught from any other treatise adopted for Europe or America, unless the teacher be a person experienced in public works of this country...........................a pupil should always be warned against circumstances arising from differences of climate, of materials etc. which would often render a literal adoption of a project successful elsewhere, a certain failure in this country." (*P.W.D., Gen., Vol. 61, pp. 62-63*).

That the engineers worked under difficult conditions is obvious, what is surprising is their prodigious output, and their frequent successes considering the lack of professional architectural training. Capt. Hawkins of the Bombay Engineers, who built the Mint, and Col. Cowper of the same regiment, who was responsible for the Town Hall, come immediately to mind. There were others at a later date. Gen. Wilkins and Gen. Fuller, both of the Bombay Engineers, were associated with the designs or construction of many of the public buildings during the Frere period. As a Civil Architect, Fuller designed the Goculdas Tejpal hospital and other works. He was regarded as the leading constructional engineer at the time. The two men formed a loose partnership in which "Wilkins stood out as a designer and Fuller as a builder." (*Sandes, 1933, II, pp. 90-92*).

Designs for buildings other than those by the P.W.D. were often decided by competition. Designs were called for, and the best one received a cash prize. Engineers and architects of the P.W.D. were also allowed to compete with permission of the authorities. F.W. Stevens won the first prize for a design for a "native bath and wash house" from the Mechanic's Institute in 1870, when he was still an assistant to the Government Architect. However, the practice of entering competitions for cash prizes was generally frowned upon by the Government and two of this other requests were refused. On the last refusal an admonition was delivered, "considering the amount of work, and number of unanswered calls for designs from the office of the architectural Executive Engineer, Government expects all officers of Col. Fuller's establishment to be fully occupied" . . . (*P.W.D., Gen., 1870, 846*).

The military engineer's contribution to the physical appearance of Bombay is considerable. The cantonments at Colaba, Poona and Ahmednagar, and the

Civil areas in Poona also bear the impress of their efforts. However, some professional architects have also left their mark on the same surroundings. The government of India, for the first time, appointed a professional architect as advisor to the P.W.D. in the time of Curzon (1899-1905). It was felt that the important building projects required a thorough knowledge of architectural styles and designs. This resulted in similar professionals being appointed in the provinces, who were to cooperate with the official engineers to "raise the aesthetic standard of buildings in India." (*Brown,1942, p. 135*). Long before this, however, the Government of Sir Bartle Frere, had already started the procedure of appointing practising architects for government projects. J. Trubshawe was persuaded to became the architectural advisor to the Bombay government, and also the Secretary to the Ramparts Removal Committee. In these positions he was responsible for a good deal of the town planning projects of the time. He also designed the Government House at Ganeshkhind (Poona). Of him, Frere says that he gave up a lucrative practice to take on the government position, and was a skilled and experienced architect. According to Frere, "his employment exercised a most extensive, useful and permanent influence on architecture and the allied arts in western India . . . I feel assured that in this as in other cases of employment of trained intelligence, Mr. Trubshawe taught us many lessons of true economy, as of true art." (*P.W.D. Old Series, 16*).

Amongst other names that stand out in this connection is that of William Emerson, a professional architect, trained at the offices of William Burges in England. Burges made designs for the new School of Arts in Bombay, and sent Emerson with the drawings to India. The latter decided to stay on because he foresaw the great opportunities in Bombay and the other cities in India. He designed the Crawford Market, a French Gothic Church at Girgaum, and later went on to design buildings at other places, including the famous Victoria Memorial at Calcutta. (R.I.B.A. file on Emerson, 1925).

The other distinguished architect associated with Bombay was F.W. Stevens (1847-1900). He received his training under the architect Charles E. David, in Bath, England. At the age of twenty he joined the service of the Indian Government after qualifying in a competitive examination. He began as assistant engineer in P.W.D. at Poona, and was later transferred to Bombay under Fuller. He was on loan to the G.I.P. Railway Company when he designed his most famous building, the Victoria Terminus. Later, he resigned from the Civil Service and began his own practice in Bombay in 1888. That he was popular is evident from the fact that he designed both for private firms, and the government, after his retirement. He was involved in improvement projects of the city, during the 1890's and designed the Municipal building in 1888. He was associated with many others, including the B.B. & C.I. Railway offices and the Oriental Bank Building. (*Building News, 59, Nov. 14, 1890, P. 700, Builder LXXVIII, 1900; pp. 325-326*).

The Indian participation in the tectonic processes was obviously at the

lowest of levels in the early stages,—i.e., in the form of labour. Later on, the Indian students passing out of the Engineering College, joined the Public Works Department and were often associated as overseers and later assistant engineers. Indian contractors, particularly the Kamathi group took part in the construction processes. Of Telegu origin, they were professional artisans. Paucity of material regarding these men, makes it difficult to understand how much they really contributed to the architecture in terms of ideas or craftsmanship. Many of them became wealthy and respected members of the Community earning titles like Rao Saheb and Rai Bahadur from the government. Most of the structures which arose in western Deccan after the mid-19th century did so, with the active participation of this group. Beginning as labourers, some of them rose to become skilled organisers through enterprise and hard work. We have names like Nagoo Sayaji whose company took on the contract of the Secretariat, High Court and the Clock Tower, at the same time—a massive task indeed. There were others who were associated with the different projects like Mr. Venkoo Baloo Kalewar (Municipal Building), Mr, Karadi Lingoo Jaya (R.B.Y.C.) Mr. Eliappa Balaram (Colaba Batteries) and others (*Persha, Telegu Samachar, 1926, pp. 48-54*).

Towards the end of the century, Government of India conducted an enquiry into the state of the skill of the Indian craftsmen. This came as a result of the debates then taking place regarding the future of architecture in India. The enquiry found the skill of the Indian craftsmen undiminished, but their methods old fashioned. Modern scientific techniques had not yet been taken up by them.

The first School of Architecture to train Indians and impart knowledge of modern techniques was set up in Bombay at the turn of the century. (*Brown, 1942, pp. 136-137*).

EPILOGUE

In the preceding chapters, we have traced the dynamics of English architecture in the western Deccan region, and tried to place this architecture in relation not only to its European antecedents, but also to English architecture in other parts of India.

We have seen how European town planning was put into effect in the early enclave in Bombay. This settlement was dominated by the 'Castle' or citadel, situated in the south-eastern part of the island, almost overlooking the bay. This bay and the harbour was the real reason for the existence of the town, and was the heart of its economic activity. When the need for defence arose, the system created was an almost exact replica of the fortifications systems of Renaissance Europe. It is a fact that medieval towns in India also showed similarities to this pattern. Both in the north and in south India there were fortified towns dominated by a central fortress. But the similarities end there. The fortifications of Bombay, with their redoubts, redans, bastions, ravelins, sallyports etc., followed closely the star-shaped patterns established by European military engineers, specially those of Vauban, the minister of Louis XIV of France. The Castle itself was also quite unlike an Indian fortress, as it was a renovated version of the old portuguese Manor House.

Inspite of Aungier's efforts at town-planning, the intramural growth of Bombay was more organic than planned, and this continued to be so till the turn of the 20th century. From a very early stage, it showed an uneven pattern of development. Spurts of growth were linked to economic ups and downs of the Company. The economy was in turn linked to the growth of the Company's political power. Bombay's growth was assured only, after the military defeat of the Peshwa, and the annexation of the Maratha territories. It was only then that the town became the economic nerve-centre of a prosperous and large hinterland. The political control of these territories allowed for a more efficient machinery

to exploit their resources. The western Deccan was drawn into the tentacles of the classic exploitative colonial economy, with the consequent changes in the old indigenous economic patterns. The pre-industrial techniques became obsolete, as finished industrial goods were imported. Exports of raw materials on a large scale completed the transformation. Bombay as the port through which these transactions took place, benefited materially. It was to become the centre of the colonial power structure—both economic and administrative, controlling the surrounding areas. It is significant, as we have seen, that Bombay had no distinctive focus in the architectural sense before this time. The focal point was the open Green, which acted as a warehouse as well as a parade ground. Structures were utilitarian, spacious and adequate. There was no attempt to impress of dazzle the beholder. Also from a very early stage, the town plan showed a dual aspect. The southern part, where Europeans predominated, had an uniform lay-out. The streets were wider, the blocks more regular, and large areas of open space were indicated. The Protestant church, and the Castle symbolized the European aspect. The Green showed the interaction between Europeans and Indians in the economic sphere. The northern part, where Indians predominated, was less uniform, the streets narrower and more tortuous, and the houses crowded close together. Here caste and occupational groups clustered together in contiguous areas, presenting the picture of unplanned organic growth. This pattern was repeated again when the population spilled out beyond the walls. The Indians settled in the same crowded groups, while the Europeans scattered themselves in splendid seclusion within spacious houses in garden compounds. This dual aspect made Bombay unlike any European town, but similar to the other colonial towns set up by the English in India. To the inhabitants of one section the other was almost like a new town.

After British rule was firmly established, and the last upheaval of the old order put down in 1857, the political reality was expressed in architectural terms by the effort to elevate Bombay into a metropolitan centre of the modern kind. The city was further strengthened as the centre of economic control of the hinterland, by the growth of the new communications systems. The Great Indian Peninsular Railway and the Bombay Baroda and Central India Railway lines began in Bombay. New roads were built, the walls pulled down, sanitation improved, and a giant effort at town-planning made. The influx of sudden wealth during the 'cottonboom' years helped the cause. Most significant factor was the transformation of the old 'open warehouse' area of the Green into a new type of business centre, more fitting for the age. The Horniman or Elphinstone Circle with the offices of the business houses around it proclaimed the new role of European finance. Thus, a concentration of buildings of western style and character similar to the street facade architecture of European towns was raised up to proclaim the mercantile and financial pride of the business firms of Europeans. The public buildings were also raised between 1862 and 1890s in the neo-Gothic style. They became the cultural and symbolic vocabulary to express the political supremacy

of the English.   Thus, the development of the modern town of Bombay began in the second half of the 19th century.

The urban control centre was aided by the setting up of special types of suburban settlements which became the administrative and military centres of the English in the inland areas. The duality present in Bombay, was again found here in a more pronounced form.   Both in Poona and in Ahmednagar the English settlements were laid out at a distance from the old Indian city. The layout of the cantonments was totally influenced by the needs of the residents. We have seen, that though originally military reasons were responsible for setting up of cantonments, later they became suburban residential areas. But, the camp formation remained—echeloned barracks, houses in straight rows amidst large garden compounds, and strict hierarchical division of space. Large open grounds, recreational facilities etc., were included in the layout. The cantonment thus became an unique and exclusive English settlement. It also evolved into the administrative nucleus of the area, and thus usurped the position of the old Indian city. The two parts were like two different universes between which there seemed to be no social or cultural links, except that one dominated the other. The city of Poona which had been the religious and administrative headquarters of the Peshwa's government, thus became an adjunct to the cantonment where the new ruling group set up its headquarters. The old town languished while the centre of gravity shifted to the cantonment and the civil station. The case of Ahmednagar was similar. The English set up the cantonment around the old fort, and the shift in importance of the old and new settlements occurred thereafter. Though set up by the English according to their own culture-specific perceptions and norms of spatial use, the cantonment was not really an importation from Europe, but a European solution to a special problem in India. (It should be noted that dual-urban patterns existed in colonial cities in other parts of the world, specially in the French colonies of the Arab world, like Morocco).

Another feature of the colonial suburban pattern as typified in the canton- ments was the success with which the colonists were able to create surroundings for themselves which conformed to their cultural values. At the same time, the social stratifications within the small English community were taken care of by the hierarchical lay-out. By keeping the Indian population at a distance they were able to maintain their political superiority and at the same time emphasize their cultural differences with the subject population. The needs of defence and security were also served by segregating not only the British Other Ranks but also the sepoys from the local population.

A similar desire led the English to construct the public buildngs in imported western styles. The revival of interest in classical architecture and the rise of utilitarian philosophy in England influenced many of the administrators in India. Even those who had great sympathy with this country assumed the attitudes of

Benthamite paternalism and wished to 'improve not only the morals but also the cultural values of the subject people as judged by their Graeco-Roman standards. This transformed the small group of colonial ruling class into a *cultural elite* expressing their pride and superiority in the architectural language of the Graeco-Roman forms which they considered to be the epitome of perfection. This emphasized their cultural links with the ancient civilization which they felt to be superior to all others.

In this connection it must be mentioned, that a certain amount of debate did occur as to the suitability of the classical style to the Indian climate. Lord Valentia criticized these structures as unsuitable to the climate. (*Valentia, 1809, I, p. 240*). Fergusson has also judged them harshly for the same reasons. (*Fergusson, 1873, pp. 470-71*). The need to create the correct effect however outweighed the other considerations. The function of the neo-classical structure was to dazzle the beholder by its size and majesty. (*See Nilsson, 1968, pp. 59, 61-62, 108, 168*).

It is obvious too, that the builders who continuously looked towards "home" for inspiration would follow the fashionable movements in the tectonic field in England. When the Gothic revival took hold there, in the early 19th century, the architecture in India was sure to reflect the new style. The years after 1860 saw the erection in Bombay of the neo-Gothic structures which we have studied individually. As discussed earlier, this movement in England was not merely a fashion. It took on a deeper meaning for society when eminent architects and critics like Pugin and Ruskin upheld it for its honesty and attached 'moral' connotations to it. This allowed the English in Bombay to attach similar cultural and political values to the style just as they had done earlier for the classical style. The neo-Gothic became the most ethical and civilized of styles to follow, and performed the same function of identifying the colonists to a different and more 'superior' culture. It therefore also became the architectural expression of political power, symbolising the establishment of British supremacy.

The architectural forms of the ruling class, were also to become the cultural models for the indigenous groups who came into contact with them. The establishment and consequent growth of education for example, began as an imposition by the government, but was soon enthusiastically taken up by Indians on a voluntary basis. In the same way, the architectural models, whose underlying object may have been the demonstration of the ethical, aesthetical and moral values of the English, were adopted and followed by those Indians who came into contact with the English through commercial dealings. This explains why the Indian citizens contributed so heavily towards the cost of these structures.

At another level, the neo-Gothic revival became an easy to follow style in Bombay. Here the abundant supply of various types of stones allowed the

architects a free hand. This was not the case in Calcutta, where brick built neó-classical patterns continued to hold sway. Critics had said even earlier that the Gothic style was more suitable for the Indian climate, than the classical patterns. (*Valentia, 1809, I. P. 240*). However, the style had either to be modified according to climatic considerations, or, to the most suitable form of the medieval Gothic revived for India. It was thought that climatically Italy was the closest to India, and that Venice with its connections with the east, was the most suitable. Consequently, the structures in Bombay acquired Italianate additions. The upper arcade of the University library being the most prominent example. Here the upper arcade of the Ducal Palace at Venice was almost fully reproduced. The verandahs and the poly-chromatic effects on the other buildings were also inspired by Italy.

The main requirements of the climate in the tropics was that the buildings had to be protected from the heat as well as the driving rains of the south-west monsoons. The thick walls and high ceilings of the neo-Gothic structures with their verandahs and balconies which formed a screen in front of the walls protecting them from the direct rays of the sun were ideally suited for this purpose. But the driving rains could as easily enter through the open arcades and staircases; as through the classical loggias and colonnades. The jhilmils and venetian shutters were ably incorporated into the classical patterns, but did not sit so comfortably on the neo-Gothic one. The example in the Deccan College was an exception, (*See above, Ornamentation*).

Visitors to Bombay during the later 19th century have paid fulsome compliments to the neo-Gothic structures, and have compared them with European prototypes. Frequent references to London were made and Bombay was often compared to Manchester and Liverpool. Some visitors however had rather odd perceptions. Prince Karageorgevitch found "faint reminiscences of Chester". (*Karkaria, 1915, pp. 65-66*). William Curtis was reminded of Vienna. He found harmony and "artistic uniformity, combined with convenience of location, taste of arrangement, and general architectural effect." (*Ibid, p. 188*). Clutterbuck calls the buildings on the esplanade, "one of the finest sights in the world". (*Clutterbuck, 1897, pp. 26-27*).

All visitors however have not given unstinted praise. Percival Landon comtemptuously calls the style "Parsee-Gothic, embellished with meaningless finials, unnecessary balustrades, silly rosettes and gratuitous cusps". (*Landon, 1906, pp. 105, 11*). Robert Byron, writing in 1931, says that their ugliness is "positive demoniac". (*Stamp, 1981, p. 1*). However, both wrote after the Victorian era, when the Gothic revival was dead in Europe. Victorian taste for over-decoration had become a matter of ridicule and censure amongst the critics. These criticisms are more a pointer to the changing aesthetic values in Europe than a real indictment on the structures themselves. Today's generation is willing

to take a fresh look at the Victorian buildings and perhaps come to its own judgements about their aesthetic values.

In the last two decades of the 19th century, the neo-Gothic advanced to incorporate new features. The Victoria Terminus, Municipal Building and the B.B. & C.I. headquarters, were created during this period. These structures incorporated some noticeably Indian or Islamic features, like the domes with constricted bases, cornices, brackets and surface decorations. Contemporaries have labelled this as the "Indo-Saracenic" style, and lavished their praise on it. Richard Temple found it to be "aesthetic" and a skilful combination of "Gothic, Italian and Saracenic" features. (*Karkaria, 1915, p. 350*). They were no doubt conscious efforts to adapt the local Indian styles to the Gothic structures, and were part of an all-India movement amongst European architects here. The two men best known for popularizing the 'style' if it may be called one, were Swinton Jacob of the Royal Engineers, and Robert Fellows Chisolm. They built structures which combined features from Gothic as well as Indian architectural sources. (*Sandes, 1933, II, pp. 99-100*). Others built similar structures in Madras, Punjab and United Provinces. (*Brown, 1942, p. 135*). In Bombay, the man first responsible for the blending of styles was F.W. Stevens, We have seen (above Chap. VI xiv). how his unexecuted design for the 'Sailor's Home' (1870) shows his preoccupation with the idea of combining Indian ornaments and other features with the European style. Even earlier, the English architect, Charles Brodrick was commissioned to design a Custom's House for Bombay (1866). This unexecuted design also shows Islamic features in its cusped arches, and its castellations and domes. The Engineering College at Poona was the earliest building in this style in the area.

This attempt can be partly explained by the rise of the Arts and Crafts Movement in England. Some outstanding men in India became followers of Morris, amongst the most well-known of whom were Havell, Percy Brown and John Lockwood Kipling. They made impassioned pleas to change the official P.W.D. policies and bring back the old "mistry" to associate with the architect. Kipling tried to revive the old handicrafts' tradition at his School of Arts in Bombay, and had his students carve some of the capitals, decorative panels and statuary of the neo-Gothic structures. Havell wanted to change the P.W.D. methods, and argued that the meaningful evolution of future architecture in India could only be achieved by encouraging the old master masons to be freely associated in the construction of the new buildings. (*Havell, 1913, pp. 214-49*). Instead of allowing traditional craft forms to die, these men wished for a greater co-operation between the mistry, the engineer and the architect. The debate about the most suitable style for the future reached its climax when proposals for the building of the new capital at Delhi were projected after 1911. It is tempting to read a political meaning into these attempts at synthesis when we remember that they coincided with the beginning of our national movement. In fact, the first session of the Indian National Congress met at Bombay, at about the same time as Stevens was

planning the Municipal building. Moreover, this whole question was thought to be very important by no less a person than the Viceroy Hardinge. His belief in trying to harmonize east and west in architecture stemmed from his desire to placate Indian opinion at a critical juncture of imperial rule.

It is a matter of opinion as to how cleverly the blending of the Indian features with the European style was done. The experiments at syncretism, if not synthesis were however superficial. The plans, the division of space, and infact the whole basis of the structure remained totally European, and Victorian. Symmetrical plans were the solutions to all problems whether the structure was to house government offices, hospitals, libraries, schools, or railway offices or banks. The central part, usually a hall housing the staircase was emphasized by a tower or dome. (Infact, the use of the dome was a departure from Gothic tradition, but was rather successfully integrated by Stevens). On both sides of the hall wings extended and were sometimes brought forward or turned backward, to form three sides of a rectangle. There were verandahs on each floor, running along the front and the sides, and sometimes the back. These arcaded verandahs formed virtually a screen which shaded the walls from the sun, and also partly protected the rooms from the driving rains. The Indian elements added were usually ornamental devices, like brackets, chajjas, chattris etc. Stevens Indianized the domes as well. All this however did not change the nature of the structures. As such, the attempts at fusion were merely additive. This made the buildings an exotic branch of the neo-Gothic revival rather than a new form or synthesis.

The movement, towards the development of an 'Indianized' style of European architecture continued beyond the 19th century, but the structures erected after 1900 are beyond the scope of this work. The most celebrated of these were the Gateway of India and the Prince of Wales Museum. Both were designed by George Wittet who was able to bring in stronger Indian elements, mainly from Gujerat and Bijapur, but even now the neo-Gothic look persists strongly.

Perhaps the true synthesis is to be looked for elsewhere than the public buildings of the British Raj. The 'bungalow' pattern as evolved by the English became the real meeting ground. Evolving from the āt-chala and chāār-chala hut form, through transference into wood and brick it was metamorphosized into the Anglo-Indian bungalow which also evoked the cottages of England.

By and large however, the long association of the two cultures did not produce any serious attempt at synthesis till the very end of the period. Even then, the attempts resulted in exotic forms and were superficially additive. The reasons for this were complex and tied up with the attitudes adopted by the British towards India at different periods of history.

The architectural efforts of the British in Western Deccan were no doubt the results of similar processes at work in the rest of India. These could not be isolated

except superficially from what was happening elsewhere, nor could be understood without proper regard to the social, cultural, and emotional motivations of the builders as well as the economic background of the times. The psychology of imperialism included many elements. There was wealth, social and military power, there was a feeling of cultural superiority coupled with the desire to retain a distinctive identity against the pervasive and overwhelming 'Indianness' and there was a strong nostalgia for a home left behind. All these combined to create an architectural vocabulary which must be called 'colonial' for want of a better term. It created structures, urban and suburban forms, and military arrangements which were deeply rooted in European tradition but were also adapted to express the political reality of imperialism as well as to cater to the material and physical comfort of a colonial commercial elite.

BIBLIOGRAPHY

PUBLISHED WORKS

Abercombe, P; 1959, Town and Country Planning: 3rd ed; London.

Anderson, P; 1856, The English in Western India, being the history of the factory at Surat, of Bombay and the sub-ordinate factories at the Western Court; London.

Archer, M; 1963, Company Architects and their Influence in India, R. I. B. A. Journal, Vol. 70, August.

Archer, M; 1968, Indian Architecture and the British, 1780-1830. R. I. B. A. Drawing Series: London.

Arnold, T. W.; 1955, Through India with a Camera, Bombay Oxford.

Ballhatchet, K; 1957, Social Policy & Social Change in Western India, 1817-1830; Oxford.

Bearce, G. D. ; 1961, British attitudes towards India 1784-1858; Oxford.

Bence-Jones, M; 1973; Palaces of the Raj, London.

Bevan, H. ; 1839, Thirty Years in India, or a Soldier's Reminiscences of Native or European Life; London.

Braun, H; 1973, Elements of English Architecture, Gr. Britain.

Brown, H. ; 1948, editor, The Sahibs; London.

Brown, P; 1976, Indian Architecture (Hindu and Buddhist Period) 7th reprint; Bombay.

Brown, P; 1942, Indian Architecture (Islamic Period) Bombay.

Burnell, J. ; 1967, Bombay in the days of Queen Anne, with an introduction and notes by S. T. Sheppard; reprint.

Burns, C. L. ; 1918, Catalogue of the collection of maps prints, and photographs illustrating the history of Bombay; Bombay.

Cameron, R, ; 1958, Shadows from India, London.

Carey, W. H. ; 1906, The Good Old Days of the Hon'ble John Company; Calcutta.

Chattopadhya, D. ; 1976, editor, History and Society, Essays in Honour of Proff Nihar Ranjan; Ray; Calcutta.

Choksey, R. D. ; 1945, Economic History of Bombay Deccan and Karnataka 1818-1868; India.

Clarke, K. ; 1975; Gothic Revival, Gr. Britain.

Clutterbuck, G. W. ; 1897, In India, Bombay the Beautiful; London.

Cousens, H.; 1916, Bijapur and its architectural remains; Bombay.

Curzon, G. N. : 1925, Marquis Curzon of Kedleston, British Government, London.

da Cunha, J, ; 1900, The Origins of Bombay, Bombay.

Danvers, F. C. ; 1894, The Portuguese in India, being a History of the Rise and Decline of their Eastern Empire, London.

Dart, Rev. J. L. C. ; editor, 1919, A history of the Cathedral Church of St. Thomas at Bombay; Bombay.

David, M. D. ; 1973, History of Bombay, 1661-1708, Bombay.

Douglas, J. ; 1883, A Book of Bombay; Bombay

        1886, Round about Bombay; Bombay

        1893, Bombay and Western India, 2 vols; London

        1900, Glimpses of Old Bombay and Western India, London.

Drewitt, F. D. ; 1907, Bombay in the Days of George IV; London.

Dufferin, Marchioness Ava; 1893, Our Viceregal Life in India—Selections from My Journal, 1884-1888; London.

Dutt, B. B. ; 1925, Town Planning in Ancient India, Calcutta.

Dutt, R. ; 1950, The Economic History of India in the Victorian Age, 7th ed. ; London.

Eden, The Hon. Emily; 1866, Up the Country, 2 vols; London.

Edwardes, M. ; 1961, A History of India from the Earliest Times to the Present Day; London.

Edwardes, M. ; 1965, High Noon of Empire; London.

Edwardes, M. ; 1967, British India 1772-1947; London.

Edwardes, S. M. ; 1902, The Rise of Bombay—A Retrospect; Bombay.

Edwardes, S. M. ; 1912, By ways of Bombay; Bombay.

Elphinstone, M. ; 1824, Appendix to W. Chaplin's Report.

Elwin, Rev. Fthr. ; 1911, Thirty-four Years in Poona City; London.

Fawcett, C. ; 1936, The English factories in India, I (New Series) 1670-77; Oxford.

Fawcett, Lady; 1947, Translated and Edited by Sir C. Fawcett with assistance from Sir R. Burns, The Travels of Abbe Carre in India and the Near East, 1672-74; London.

Fergusson, J. ; 1873, History of the Modern Styles of Architecture, 2nd edition; London.

Farriday, P, ; 1963, editor, Victorian Architecture; London.

Fleming, J. ; Honour, H.; Pevsner, N; 1978, Penguin Dictionary of Architecture, Great Britain.

Fletcher, B. ; 1963, History of Architecture on the Comparative Methods for Students, Craftsmen and Amateurs; 7th edition, London.

Forbes, J. ; 1834, Oriental Memoirs, 2 Vols; London.

From Madras to Delhi and back via Bombay, 1874, Madras.

Forrest, G. W. ; 1887, editor, Selections from letters...................preserved in the Bombay Secretariat, Home Series, Vol. I; Bombay.

Forrest, G. W. ; 1903, Cities of India, Past and Present; London.

Furber, H. ; 1965, Bombay Presidency in the mid-eighteenth century; London.

Graham, M. ; 1812, Journal of a Residence in India; Edinburgh.

Grewal, J. S. ; 1970, Muslim Rule in India; India.

Grewal, J. S. ; 1975, Medieval India; History and Historians; Amritsar.

Guide to Poona and Surrounding Districts; 1902, Bombay.

Hamilton, A. ; 1739, A New Account of the East Indies, 1688-1723, 2nd edition, Vol. I.; London.

Havell, E. B.; 1913, Indian Architecture, reprint.

Heber, Rev. R. 1828, Narrative of a Journey through the Upper Provinces of India, from Calcutta to Bombay, 1824-25; 3 Vols. London.

Hiorns, F. R. ; 1956, Town Building in History; Great Britain.

History and Description of Poona; 1896-97.

Hodges, W. ; 1793, Travels in India during the years 1780, 1781, 1782 and 1783; London.

Hunter, Sir, W. W. ; 1891, Bombay Administration 1885-1890. Oxford.

Jordan, R. F. ; 1959, A Picture History of the English House; London.

Karkaria, R. P. ; 1951, editor, The Charm of Bombay. An Anthology; Bombay.

Kincaid, D, ; 1973, British Social Life in India, 1608-1937; London.

King, A. D. ; 1976, Colonial Urban Development; London.

King, A. D. : 1977, Domestic Architecture in India; A./A. R. P. II, S. V. 551, June.

Kosambi, M. ; 1980, Bombay and Poona: Sweden.

Landon, P. ; 1906, Under the Sun, London.

Maclean, J. M. ; 1891, Guide to Bombay; Bombay.

Madras to Delhi via Bombay.

Majumdar, R. C. ; 1965, General Editor, British Paramountcy and the Indian Renaissance, Vol. X. pt 2; Bombay.

Majumdar, R. C. ; Roychowdhury, H. C.: Dutta, K. K.; 1956 An Advanced History of India; London.

Malabari, P. B. M. ; 1910, Bombay, in the Making (1661-1726); London.

Masselos, J. C. ; 1974, Towards Nationalism, Bombay.

Mate, M. S. ; 1959, Maratha Architecture (1650 A. D. to 1850 A. D.); Poona.

Mate, M. S. ; 1961-62, Islamic Architecture of the Deccan; Poona.

Mate, M. S. ; 1967, Deccan Woodwork; Poona.

Misra, B. B. ; 1961, The Indian Middle-classes; Their Growth in Modern Times; Oxford.

Mitterwallner, G. von; 1964, Chaul; Berlin.

Moses, H. ; 1850, Sketches of India with Notes on the Seasons, Scenery and Society; London.

Mumford, L. ; 1938, The Culture of Cities; London.

Mumford, L. ; 1961, The City in History; Its Origins; New York.

Murray, J. ; 1872, Handbook for Travellers in India; London.

Murray, J. ; 1901, Handbook for Travellers in India, Burma, and Ceylon; London.

Nellist, J. B. ; 1967, British Architecture and its Background; London.

Nightingale, P. ; 1970, Trade and Empire in Western India 1784-1806; Cambridge.

Nilsson, S. ; 1968, European Architecture in India, 1750-1850; London.

Nunes, J. ; 1979, Monuments in Old Goa; New Delhi.

Old and New Bombay, A Historical and Descriptive Account of Bombay and its Environs; 1911; Bombay.

Oturkar, R. V. ; 1951, editor, Poona, Look and Outlook; Poona.

Ovington, J. ;1929, A Voyage to Surat in the year 1689; London.

Panikkar, K. M. ; 1974, (reprint) Asia & the Western Dominance; London.

Parasnis, D. B. ; 1916, Mahableshwar; Bombay.

Pasley, C. W. ; 1817, Course of Military Instruction, originally composed for the use of the Royal Engineer Department; London.

Pevsner, N. ; 1963, editor, Pelican History of Art (1530-1830), J. Summerson: U. K.

Plommer, H. ; 1956, Ancient and Classical Architecture; London.

Plumb, J. H. ; 1976, England in the Eighteenth Century, Pelican History of England; Great Britain.

Poona Guide and Directory; 1925, Poona.

Poona Kirkee Garrison Military Directory; 1930; Poona.

Postans, Mrs. Emily; 1838, Western India in 1838, 2 vols; London.

Pusalkar, A. D. and Dighe, V. G.; 1949, Bombay, Story of the Island City; Bombay.

Raghuvanshi, V. P. S. ; 1969, Indian Society in the Eighteenth Century; N. Delhi.

Ranade, M. G. ; 1900, Rise of Maratha Power; Bombay.

Rawlinson, H. G. ; 1920, British Beginnings in Western India; Oxford.

Rungta, R. S. ; 1970, The Rise of Business Corporations in India, 1851-1900; Cambridge.

Sandes, E. W. C. ; 1933, The Military Engineer in India; Great Britain.

Sardesai, G. S. ; 1948, New History of the Marathas, Vols. II and III, Bombay.

Selections from the Records of the Bombay Government; 1863, LXXVI, New Series; Bombay.

Shakespear, Col. L. W.; 1916, Poona and its Battlefields, London.

Shepherd, W. A. : 1857 Life in Bombay and the Neighbourhood of the Persian Gulf; London.

Sheppard, S. T. ; 1916, The Byculla Club, 1933-1916; Bombay.

Sjoberg, G. ; 1960, The Pre-Industrial City, Past and Present; USA.

Spear, T. G. P. ; 1932, The Nabobs; London.

Spear, P. ; 1970, A History of India, Vol. 2, Pelican; Great Britain.

Srinivas, M. N. ; 1966, Social change in Modern India; U. S. A.

Stamp, G. ; 1977, Victorian Bombay: Urbs Prima in Indis; A./A. R. P. June; II.

Stamp, G. ; 1981, British Architecture in India, 1857-1947; Sir George Birdwood Memorial lecture; R. S. A. J.; No. 5298, Vol CXXIX.

The Cambridge History of India; 1929, Vol. V; London.

The New Cambridge Modern History; 1967, Vol. VI and Vol. IX; Cambridge.

Thomson, D. : 1977, England in the Nineteenth Century; Pelican History of England; Great Britain.

Toy, S. ; 1955, A History of Fortifications; London.

Toy, S. ; 1957, The Strongholds of India; London.

Trevelyan, G. M. ; 1946, English Social History; Great Britain.

Vacha, P. B. , 1962, Famous Judges, Lawyers and Cases of Bombay; Bombay.

Valentia, Viscount, C. A. : 1811, Voyages and Travels to India, Ceylon............ in the years 1802, 1803, 1804, 1805 and 1806; 2 vols; London.

Walter, I. ; 1966, English Architecture throughout the Ages; Secular Buildings; London.

Weber, M. ; 1958, The City; U. S. A.

Western India Guide and Directory, Poona and Kirkee; 1931-32, Sec. 1. Poona.

Wheeler, J. T. ; 1972, History of English Settlements in India, 2nd edition; Delhi.

Williamson, T. ; 1810, The East India Vade-Mecum; London.

Woodruff, P. 1963, The Men who Ruled India, 2 vols; London.

Wright, A. ; 1918, Annesley of Surat and his Times; London.

GAZETTEERS

Bombay, 1910, City and Island; 3 vols; Bombay.

Bombay Presidency, Campbell, J. M. ; 1882, Thana District Vol. XIII pt. II, Vol. XIV; Bombay.

Bombay Presidency, Campbell, J. M. ; 1884, Vol. XVII, Ahmednagar; Bombay.

Bombay Presidency, Campbell, J. M. ; 1885, Poona, Vol. XVIII, Part III; Bombay.

Bombay Presidency, Materials towards a statistical account of the Town and Island of Bombay, 1894, 3 vols; Bombay.

Imperial of India, 1909, Provincial Series, Bombay Presidency, Vol. I; Calcutta,

Station, of Poona Contonment, Garrison Engineer, 1979-80.

JOURNALS

Bengal, Past and Present, Vol. XCIV, Part II, No. 179, July to December, 1975, J. Roselli, William Bentinck and his Age".

Bombay Builder, Illustrated Journal of Engineering Architecture, 1865, 1867, 1868; Bombay.

Indian History Congress. Proceedings of the Thirteenth Session, 1969; Patna.

Journal of the Bombay Branch of the Royal Asiatic Society 1877, Vol. XIII; 1881-82, Vol. XV; 1930, Vol. VI, (New Series); Bombay.

Lotus International, 26, 1980-81, Quarterly Architectural Review; Milan.

Marg; 1965, June, Bombay.

Telegu Samachar, 1926 Jan., Persha S. S. "The Builders of Bombay".

PRIMARY SOURCES (Unpublished)

At Bombay:—

Files of the Public Works Department, General,—relating to correspondence between the Provincial Government, the P. W. D. and Government of India, relating to buildings and other townplanning projects.

Files of 1855-56, 1868-89; Gen. file 380 of University Hall.

AT I. O. L. &. R; LONDON

PWD Files of letters from Bombay to Secy of State 1858-1900.

PWD Files collections of despatches to Bombay 1859-1869.

Journals and Ledgers of the Collector at Poona, Bombay Proceedings. Range 431, Vol. 30, 31 (MSS).

PWD Files (Old Series) Miscellaneous, No. 16.

PWD Proceedings (Consultations) :—

Range 353, 47-53 (1861-65)

Range 441, 64-68 (1866-1880)

Vols. 1584, 1787, 1788, 2411

Frere Collection and Frere Papers.

INDEX

Plate 1

Plate 2.

Plate 3.

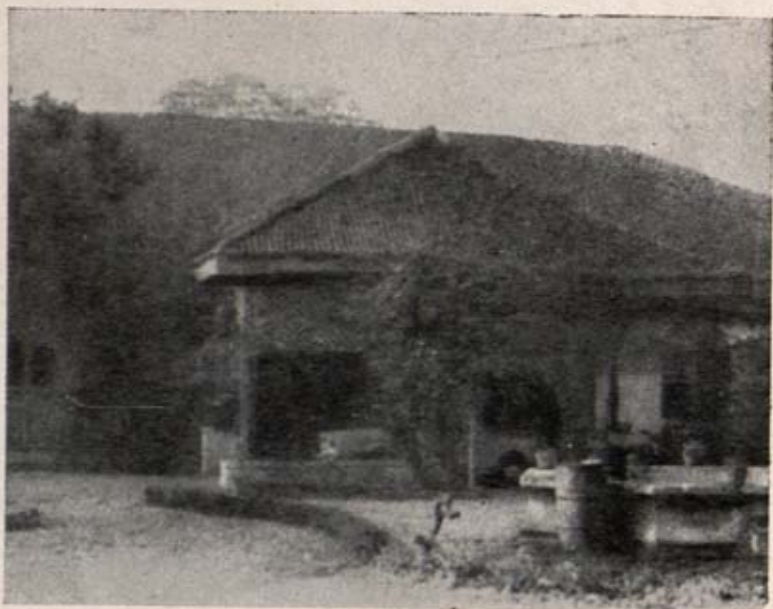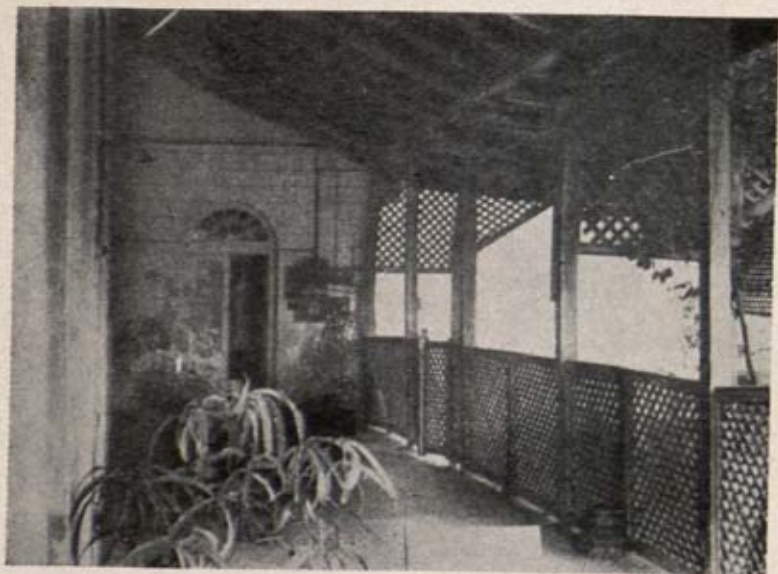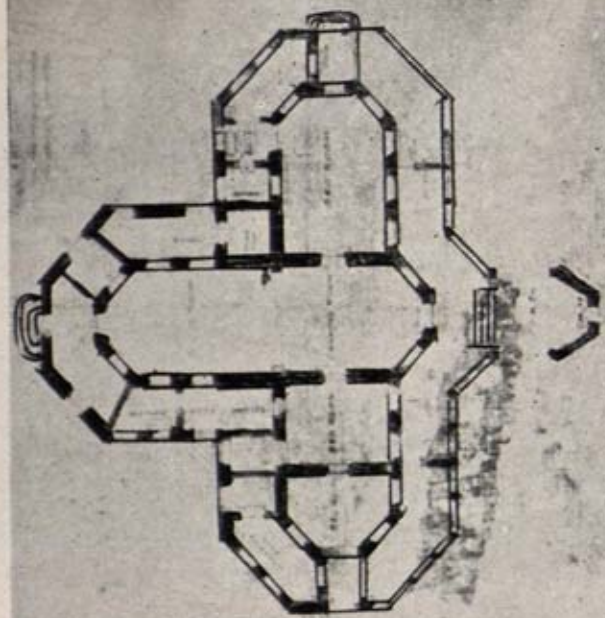

Plate 4.

Plate 5.
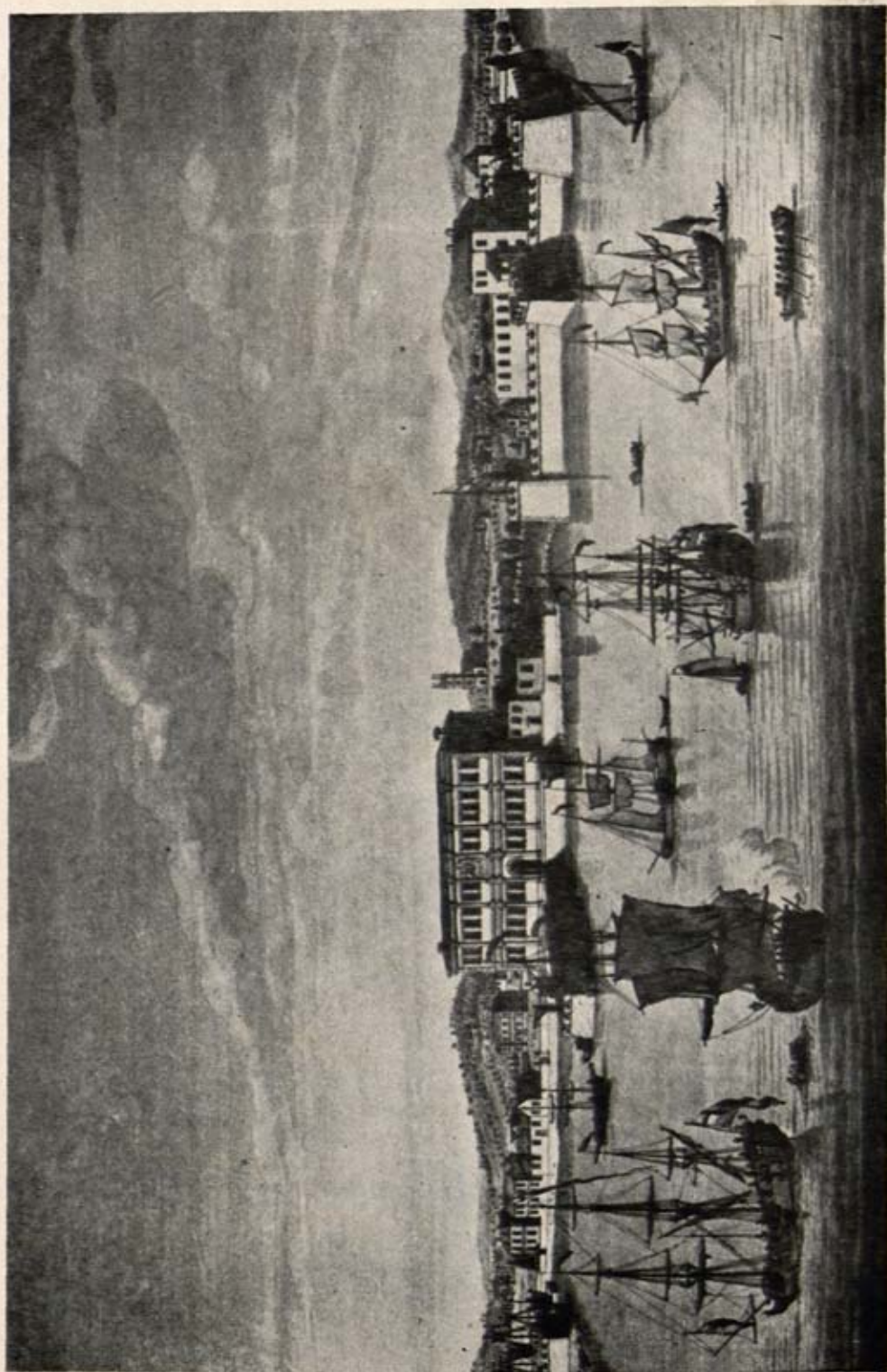
Plate 6.

Plate 7.
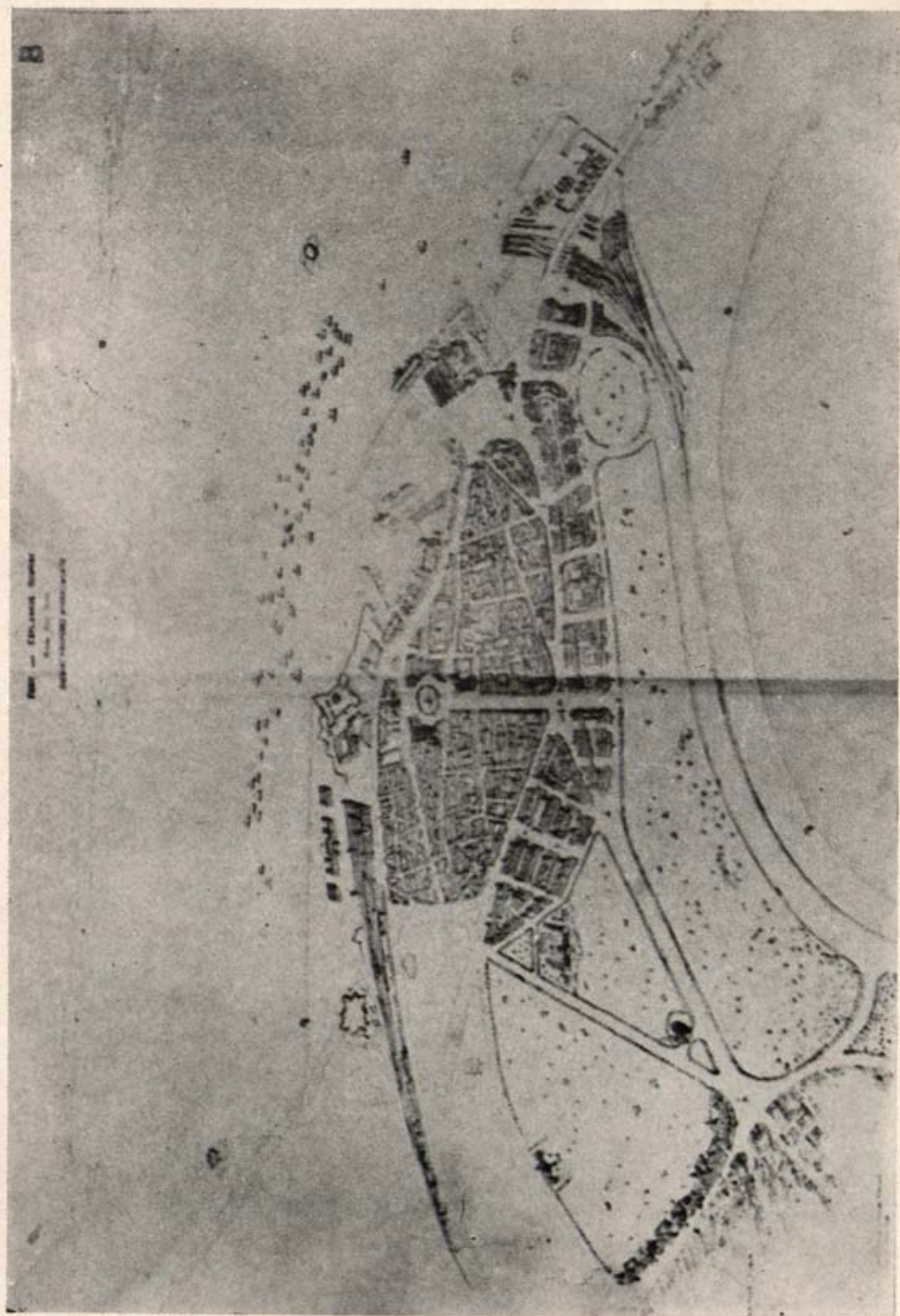
Plate 8.
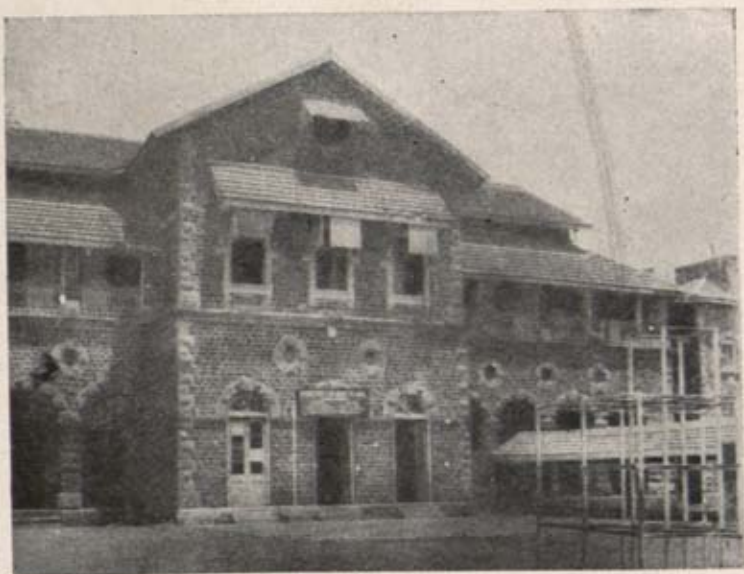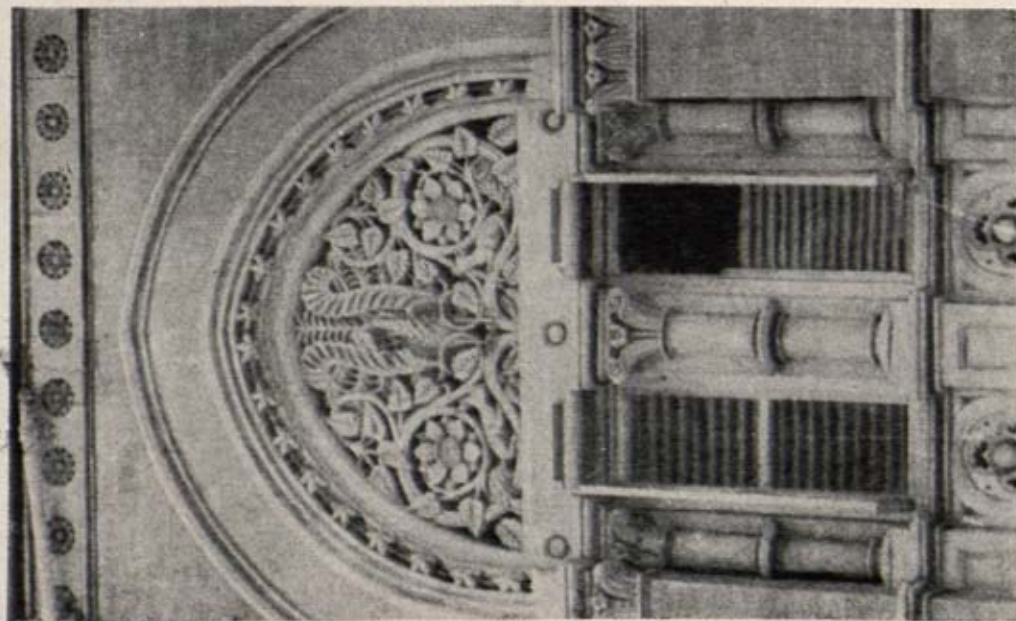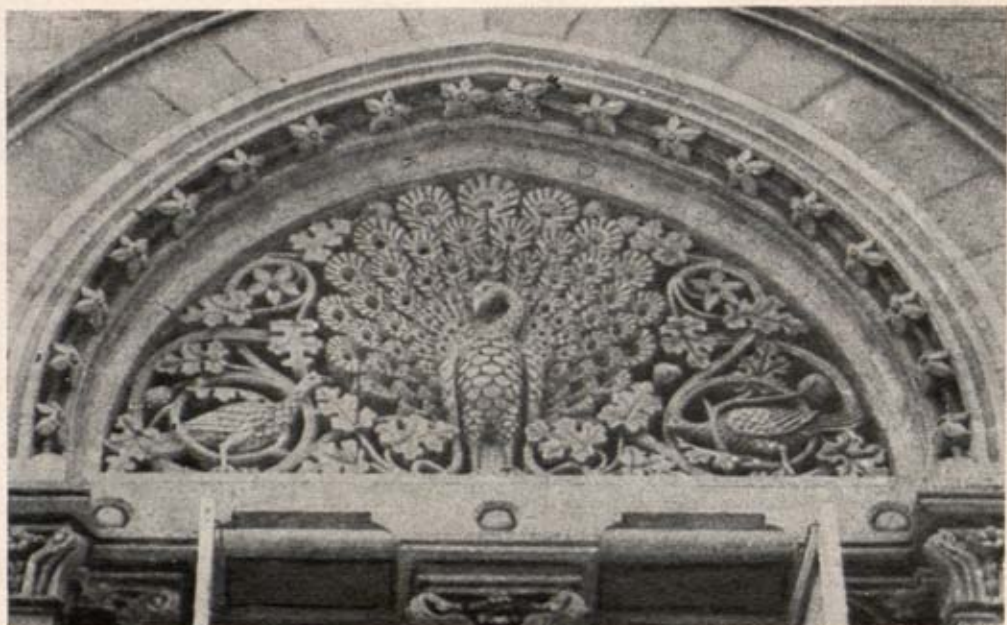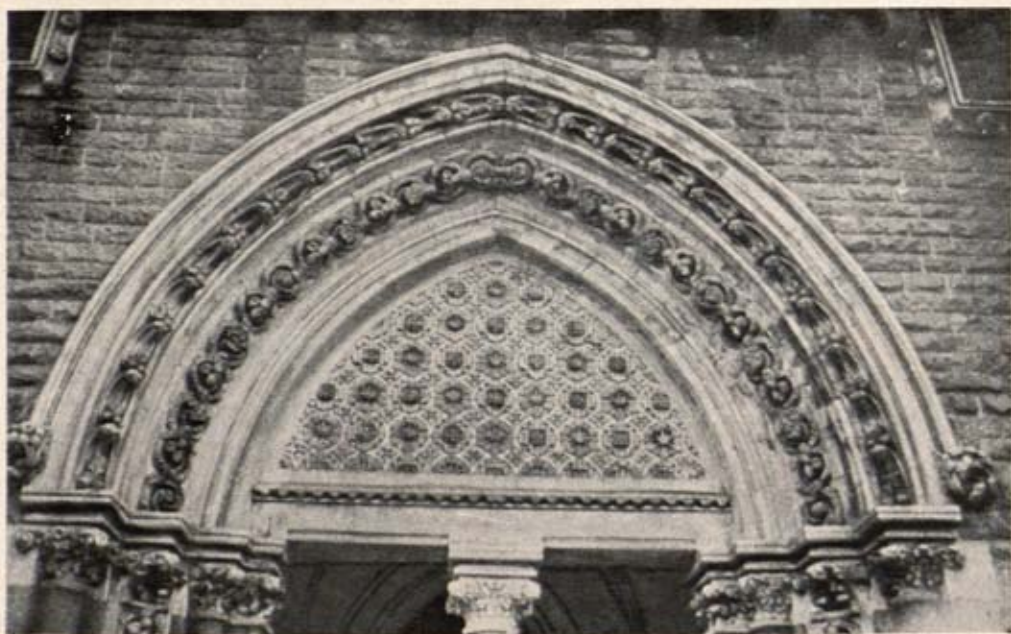
Plate 9.

Plate 10.
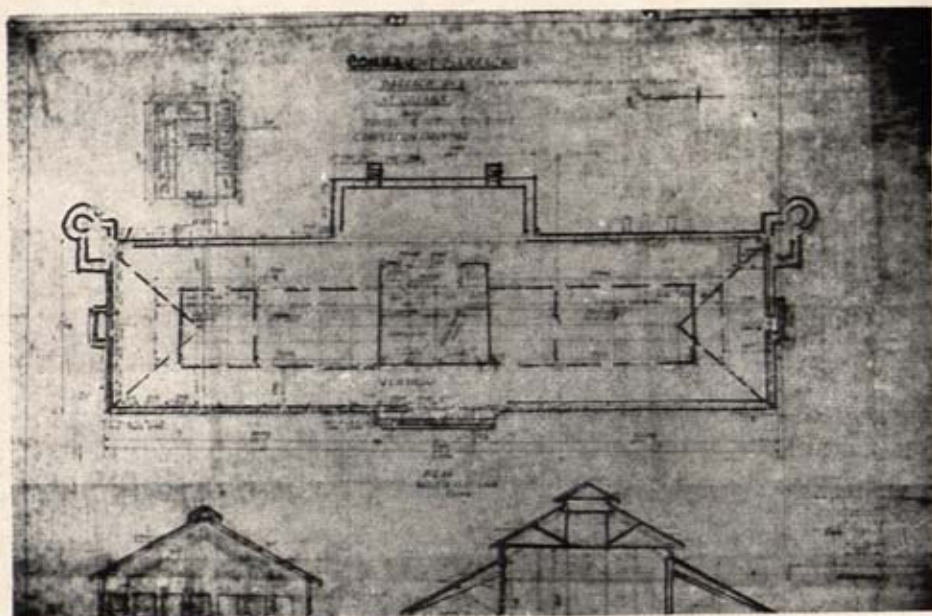
Plate 11.
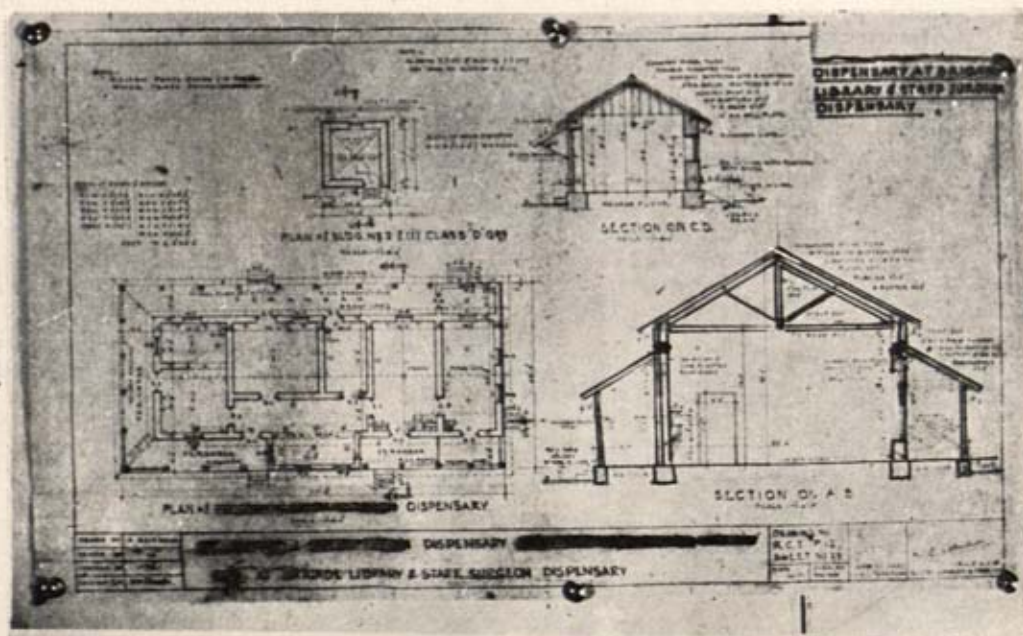
Plate 12.
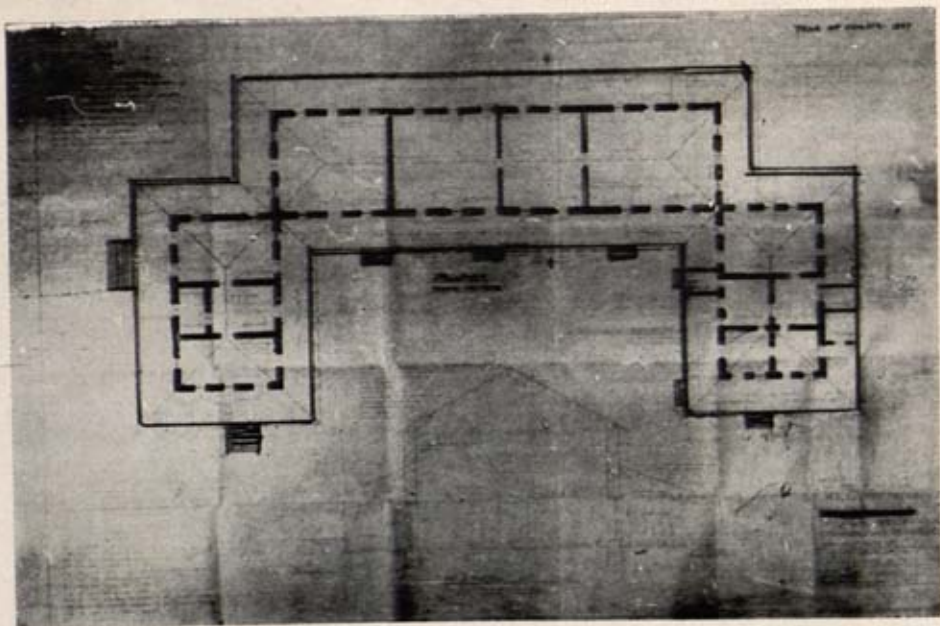
Plate 13.

Plate 14.

Plate 15.

Map
OF THE
FORT OF BOMBAY.
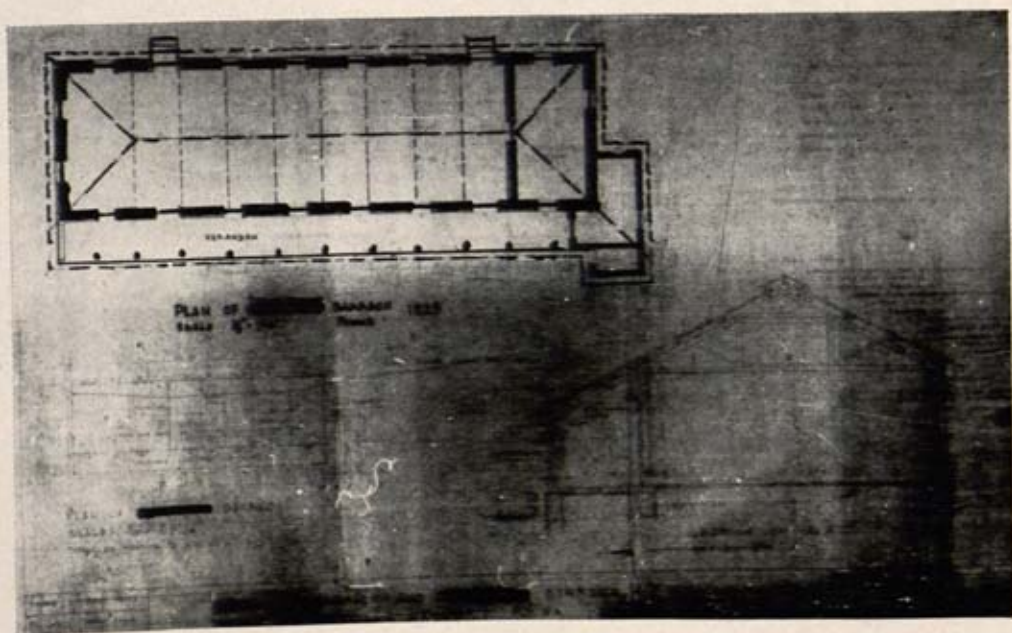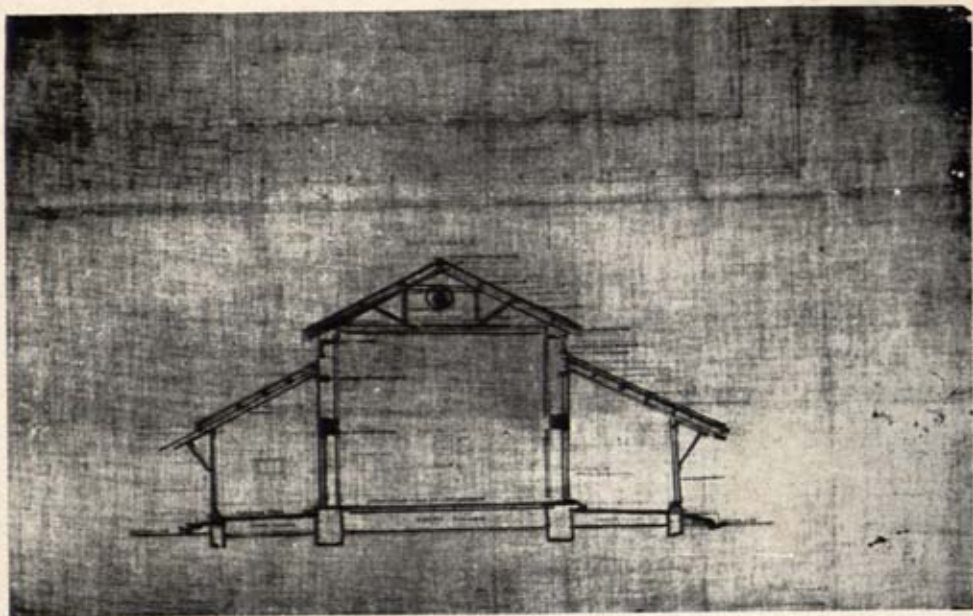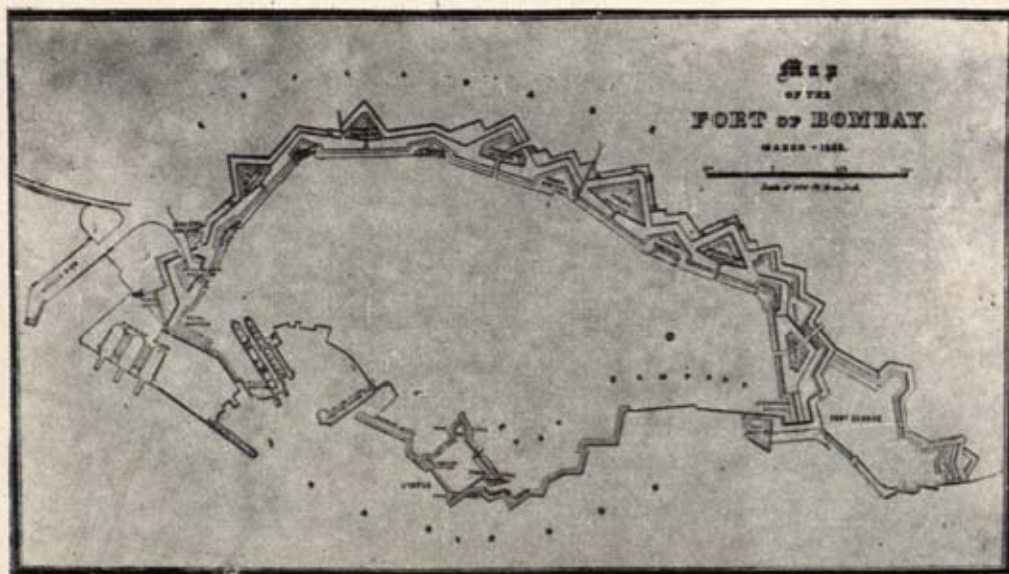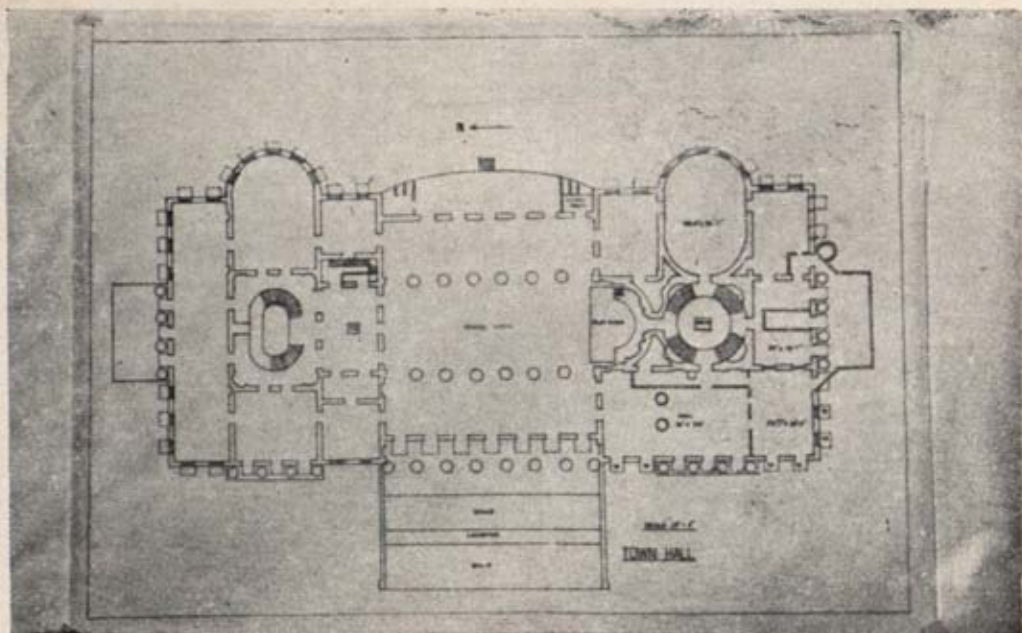
Plate 16.

Plate 17.

Plate 18.
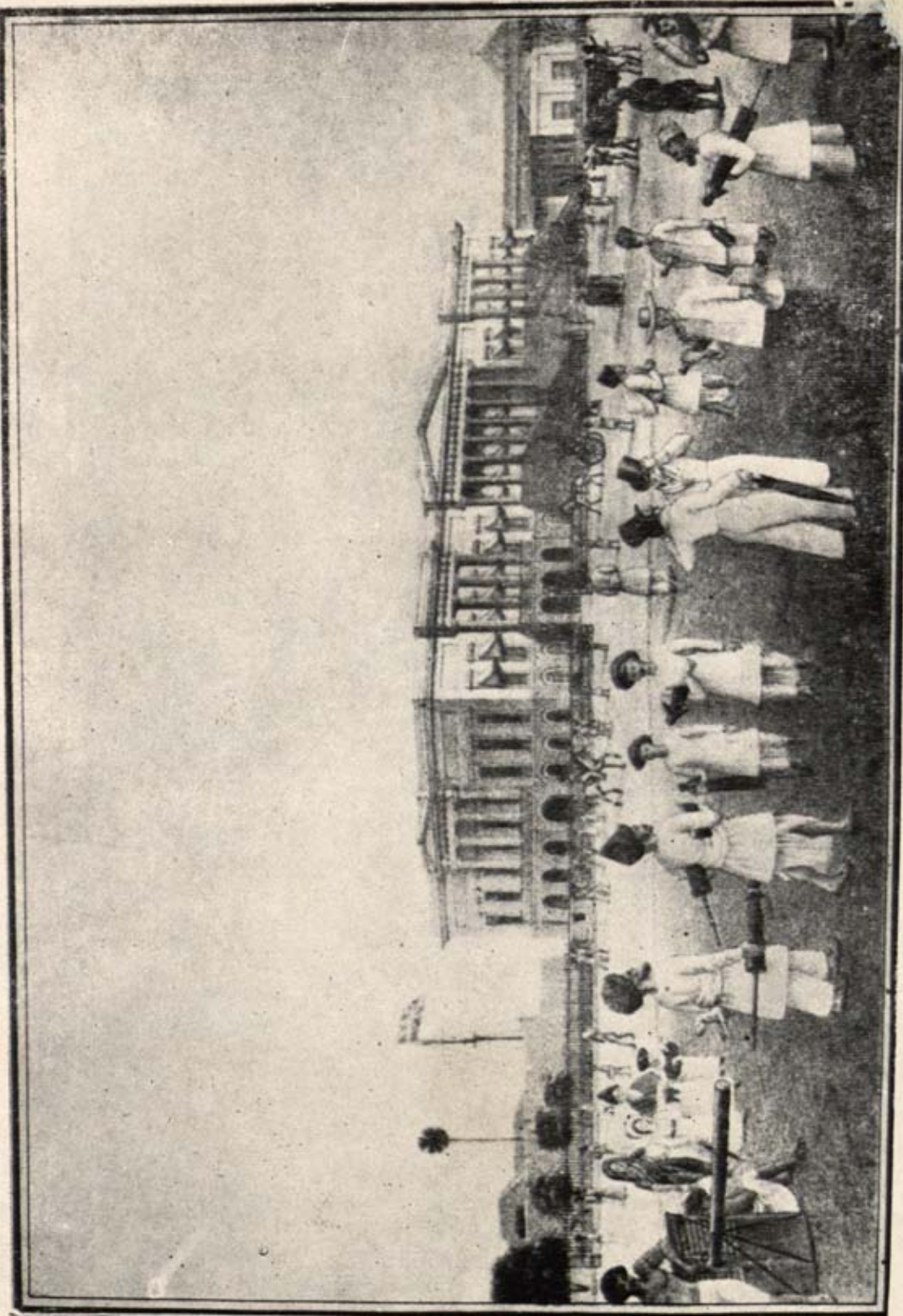
Plate 19.
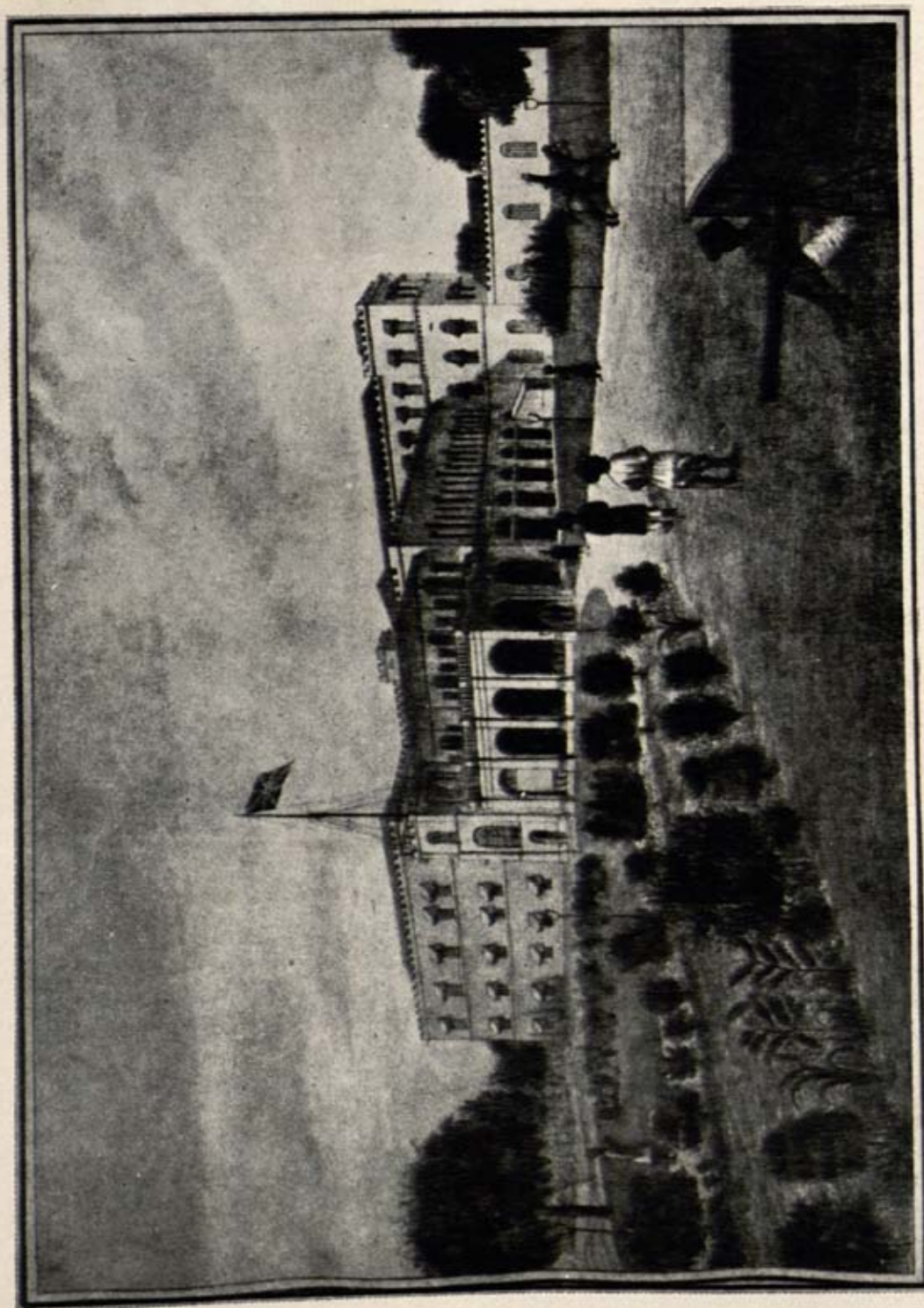
Plate 20.

Plate 21.
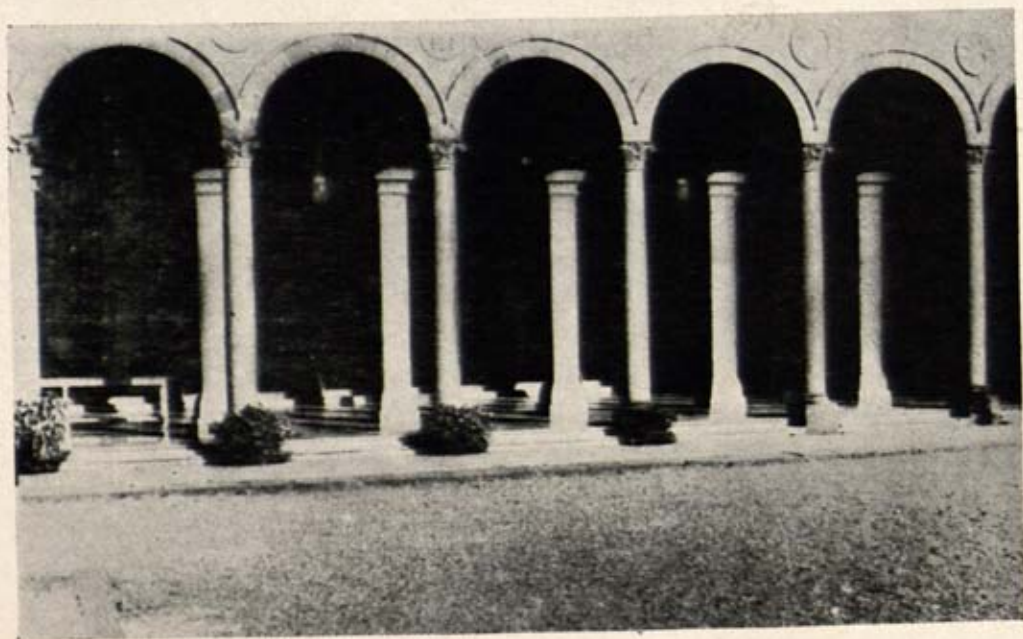
Plate 22.
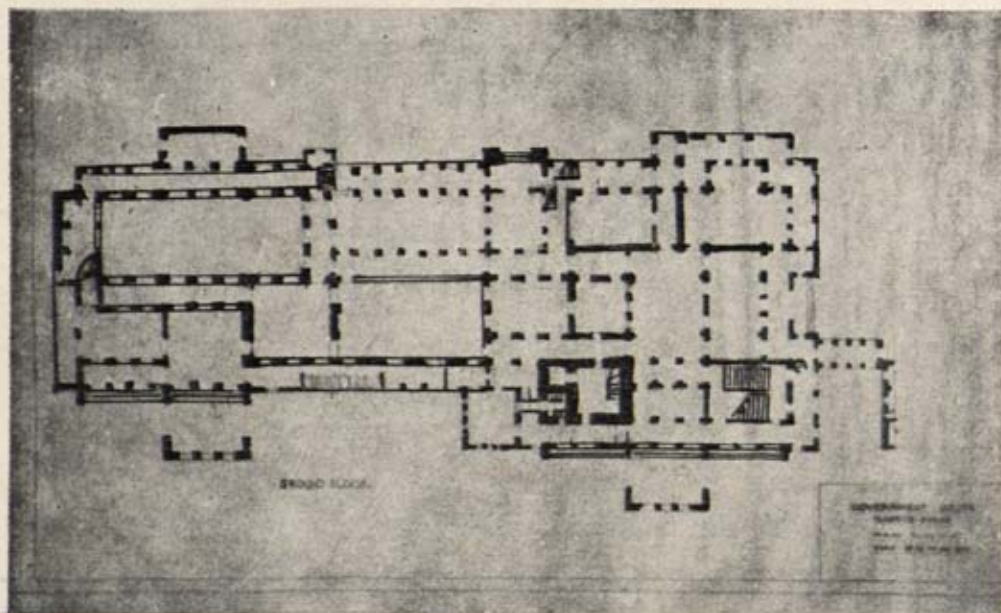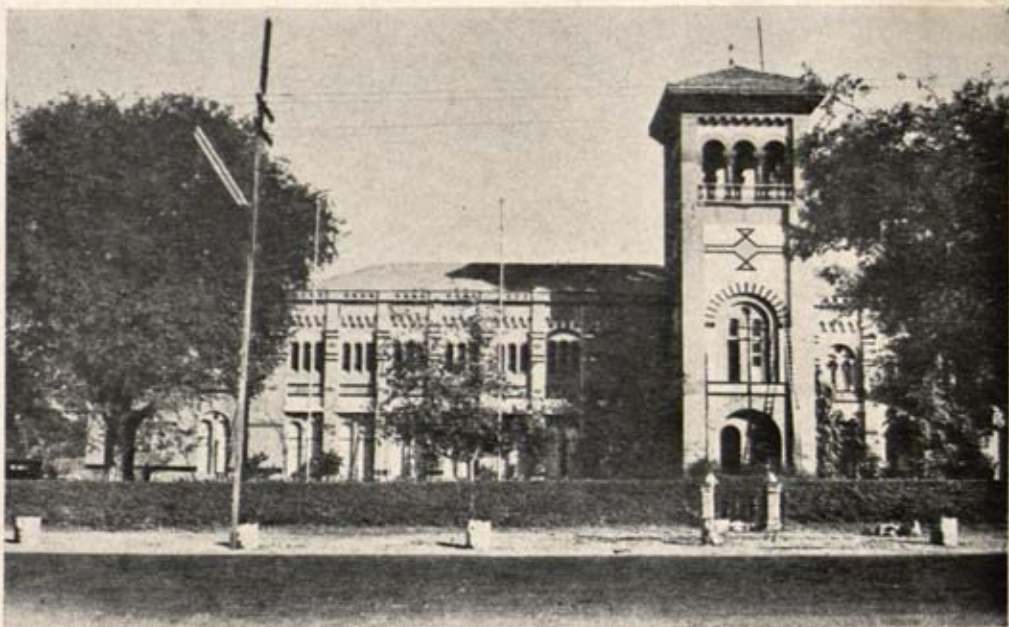
Plate 23.

Plate 24.

Plate 25.
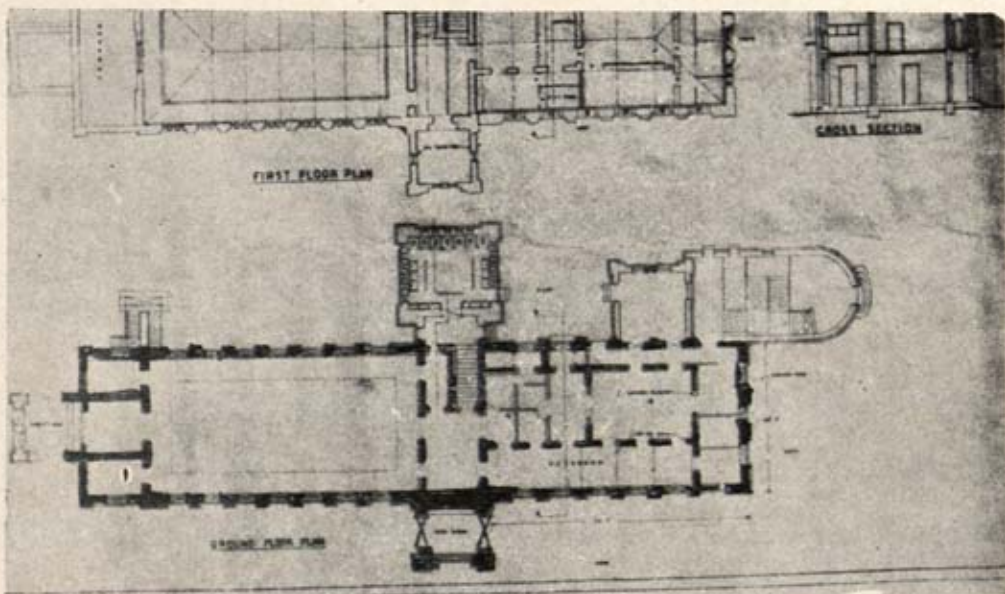
Plate 26.
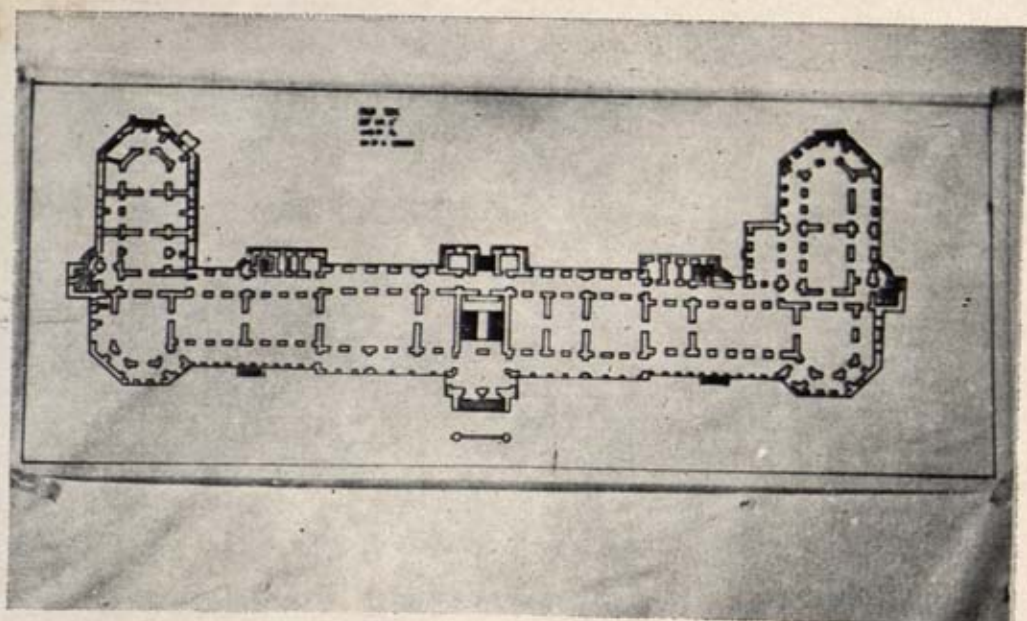
Plate 27.

Plate 28.

Plate 29.

COLLEGE OF ENGINEERING PUNE
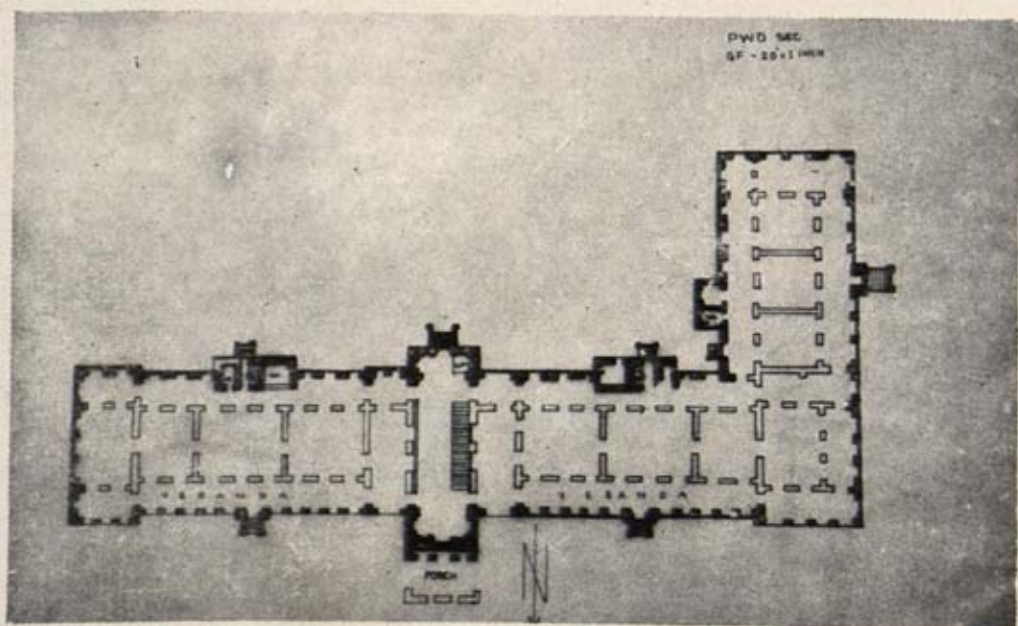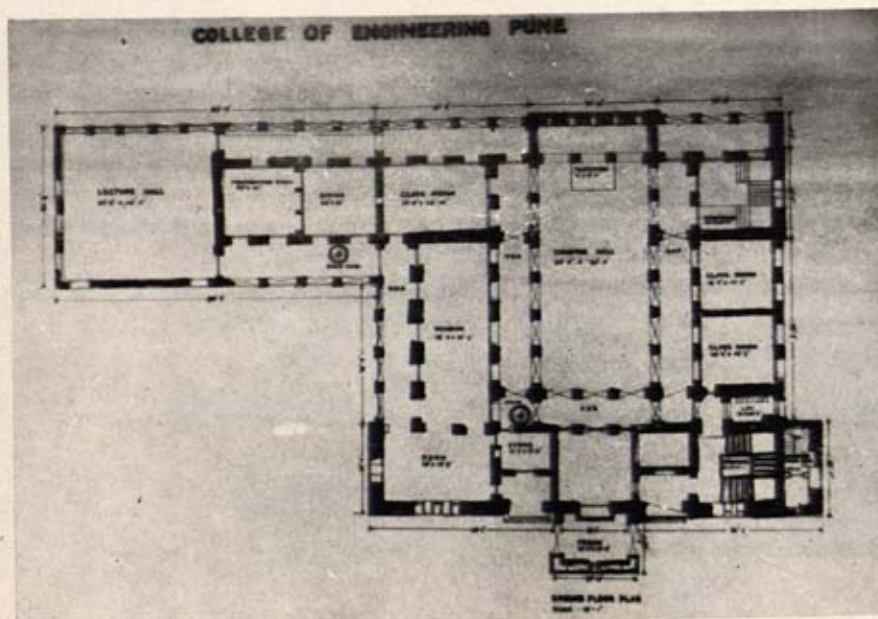
Plate 30.

Plate 31.

Plate 32.

Plate 33.

Plate 34.
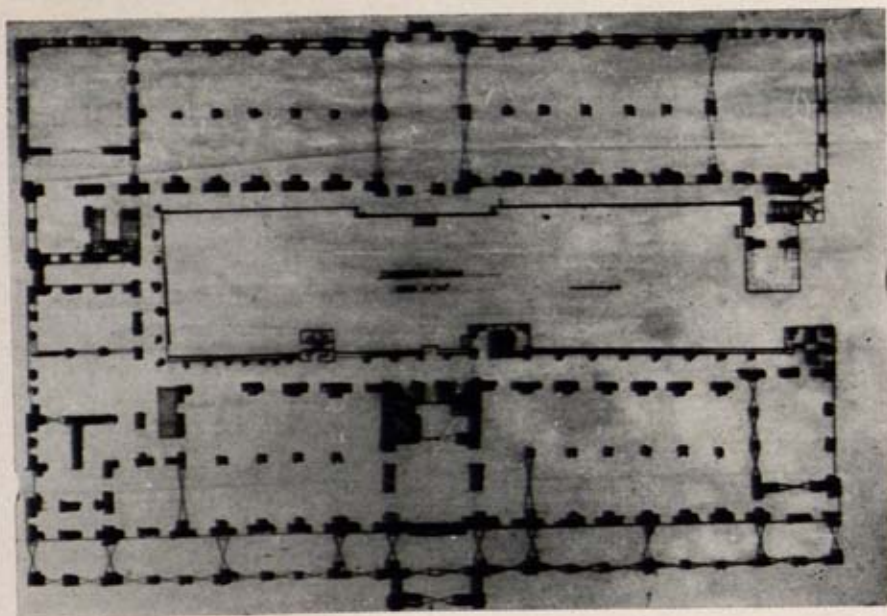
Plate 35.

Plate 36.

Plate 37.

GROUND FLOOR PLAN

Plate 38.

G. F. PLAN

HIGH COURT
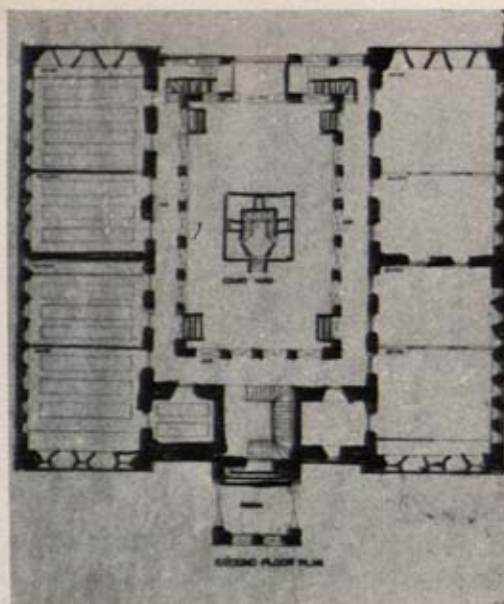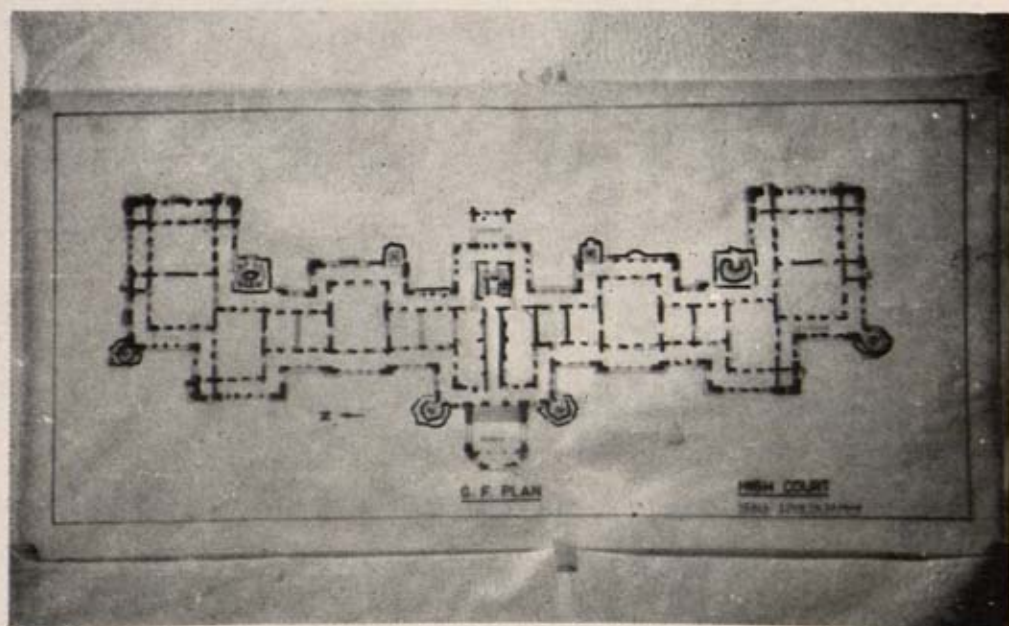
Plate 39.

Plate 40.

Plate 41.
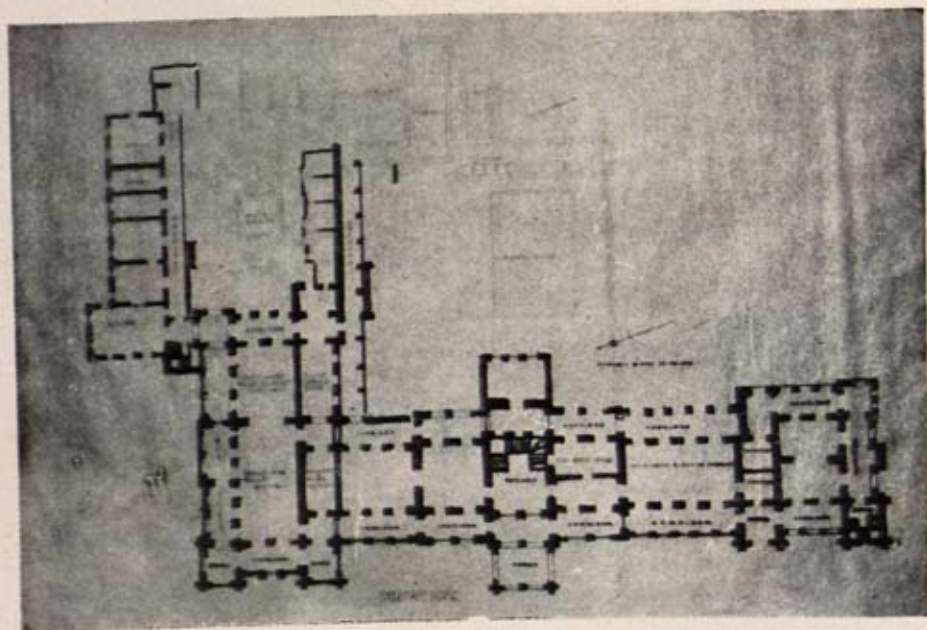
Plate 42.

Plate 43.

Plate 44.

Plate 45.

Plate 46.

Plate 47
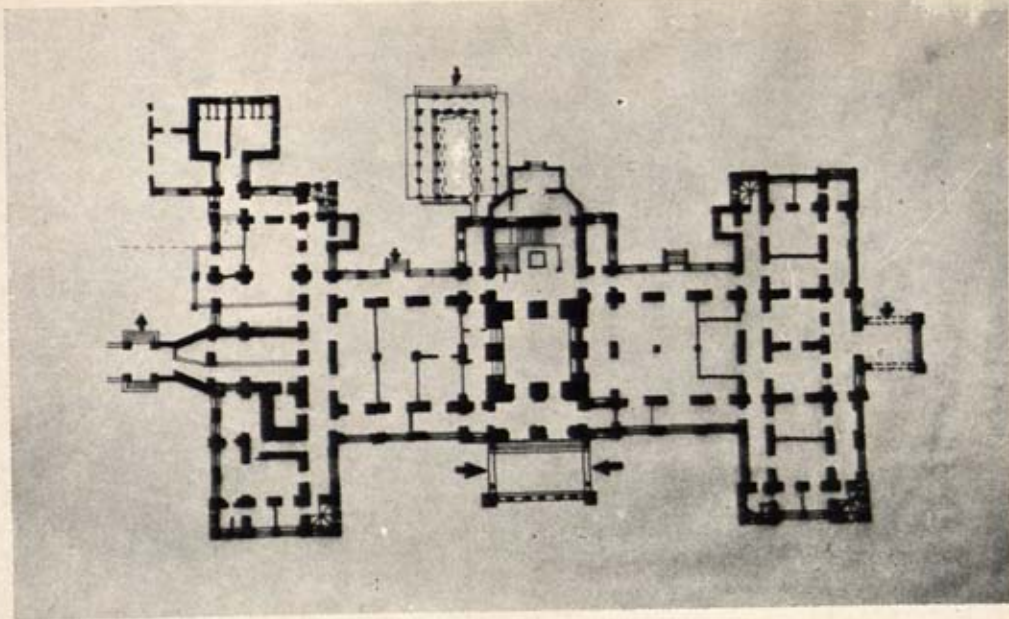
Plate 48

Plate 49.
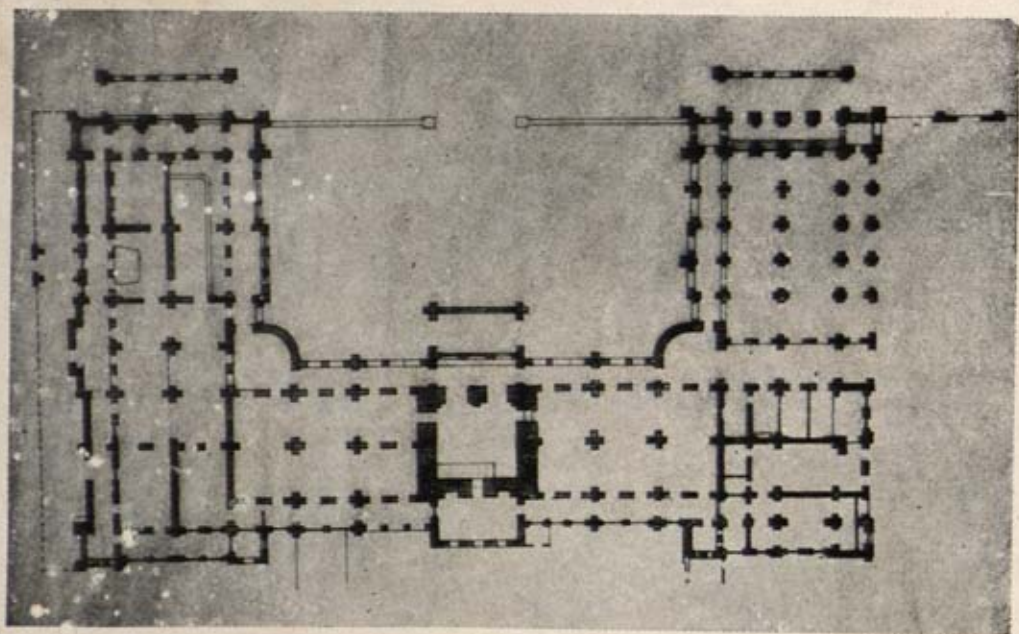
Plate 50.

Plate 51.

Plate 52

Plate 53
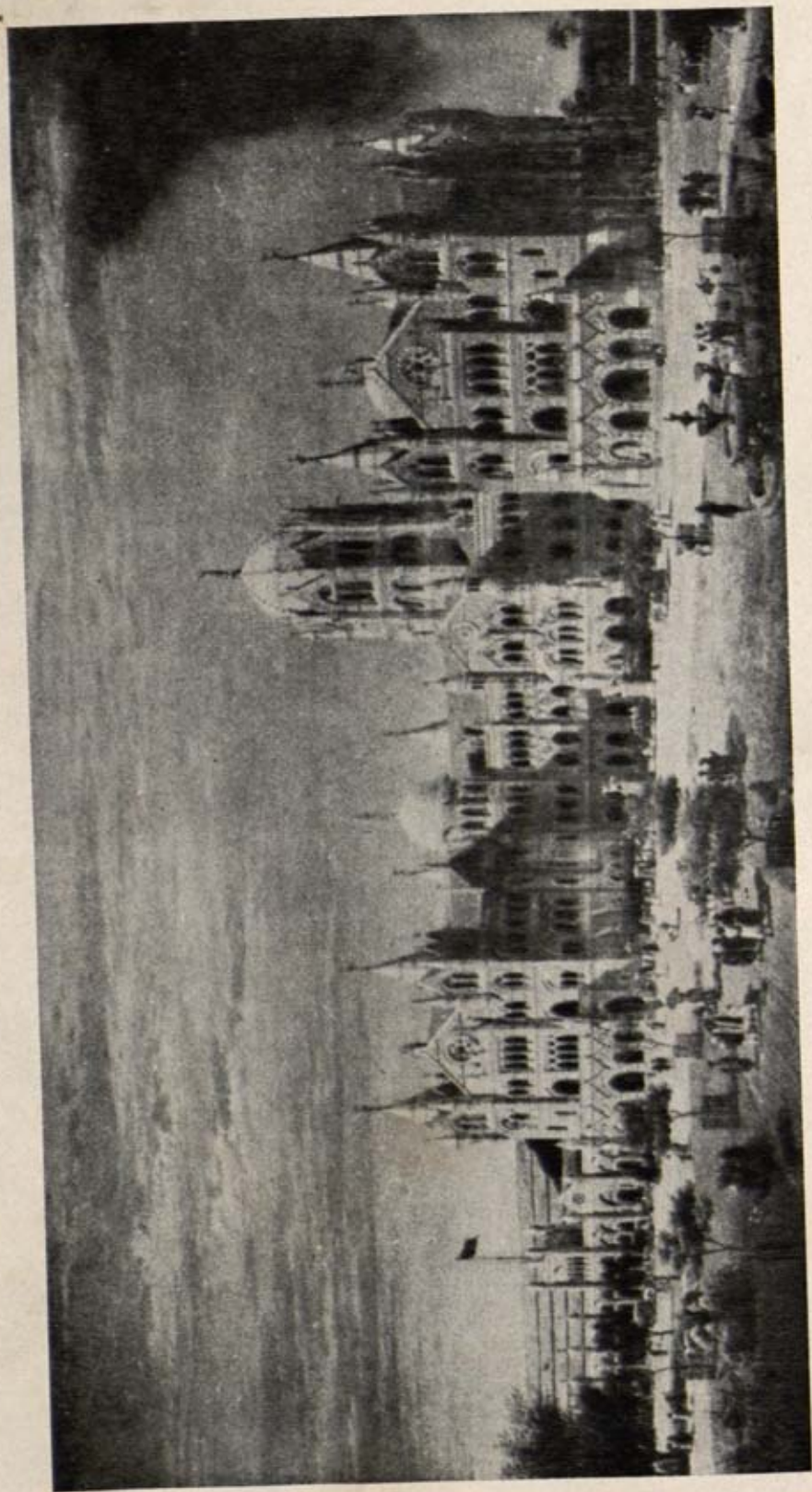
Plate 54.
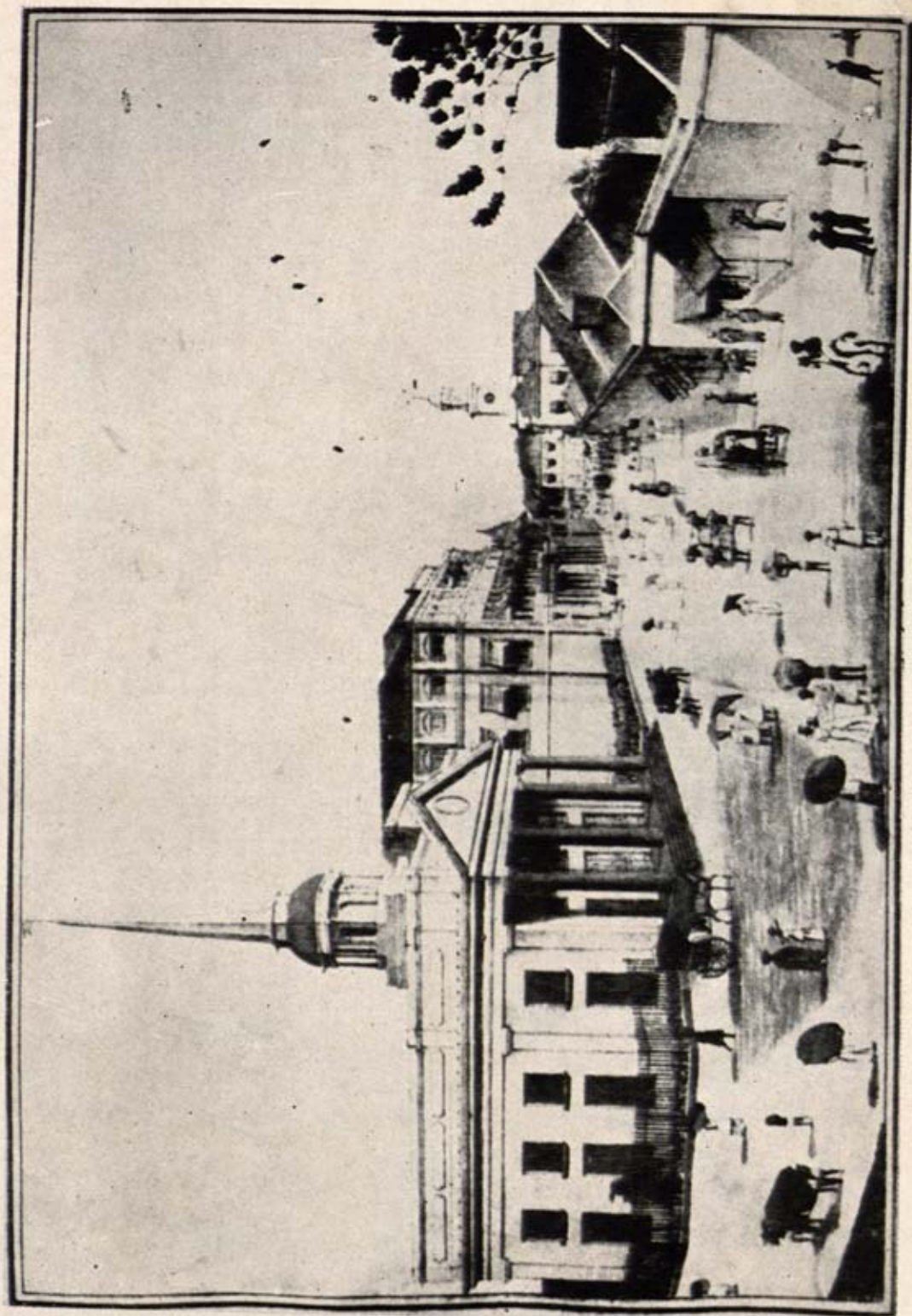
Plate 55.
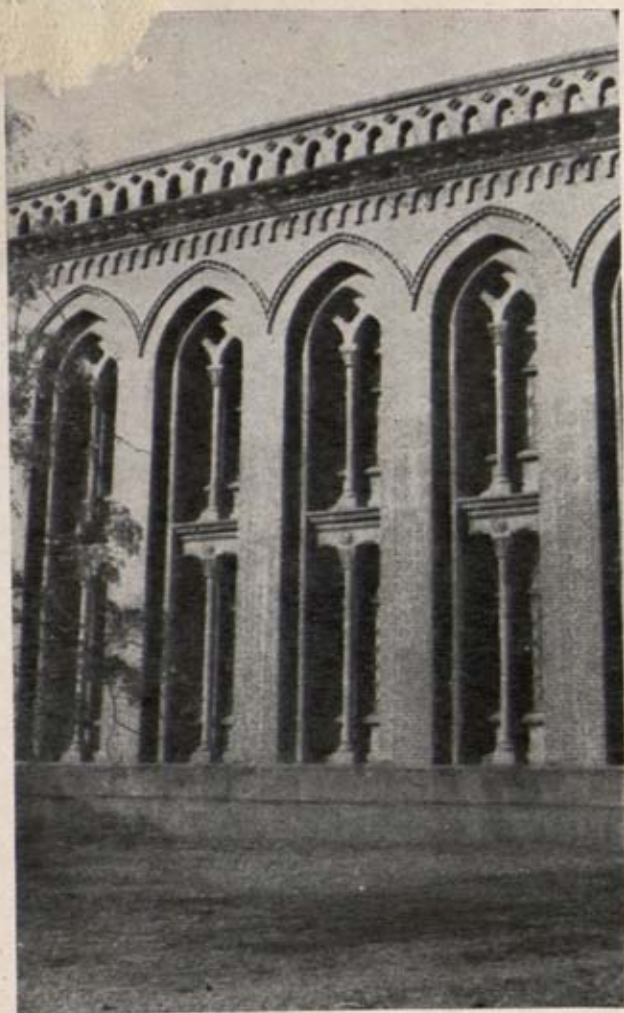
Plate 56

Plate 57.

Plate 58.

Plate 59.

Plate 60.

Plate 61.

Plate 62.

Plate 63.

Plate 60.

Plate 61.

Plate 62.

Plate 63.

Plate 64.

Plate 65.

Plate 66.

Plate 67.

Plate 68.

Plate 69.

Plate 70.

Plate 71.

Plate 72.

Plate 73.
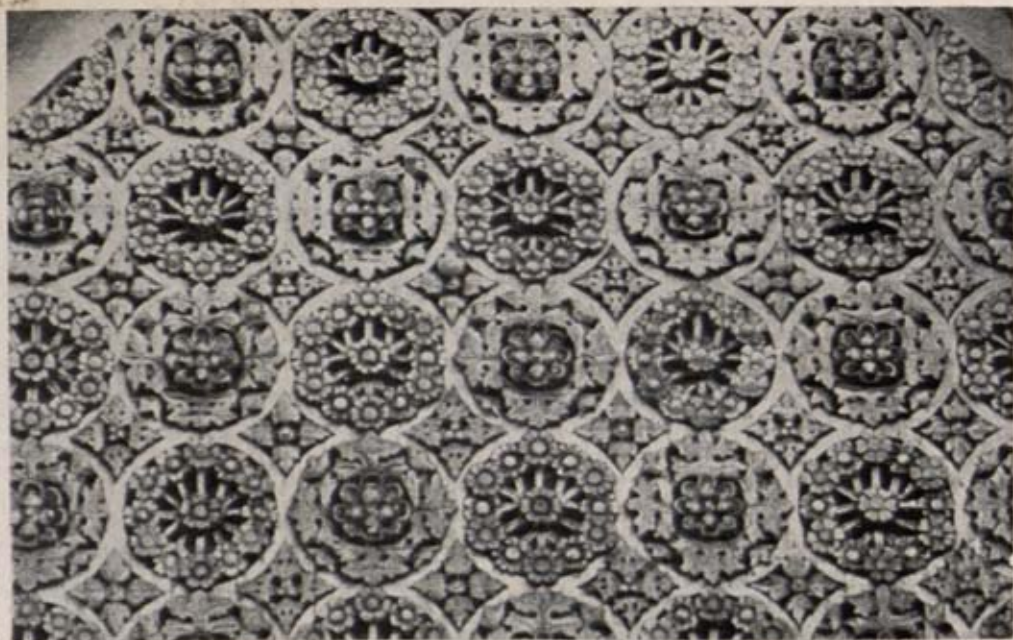
Plate 74.

Plate 75.
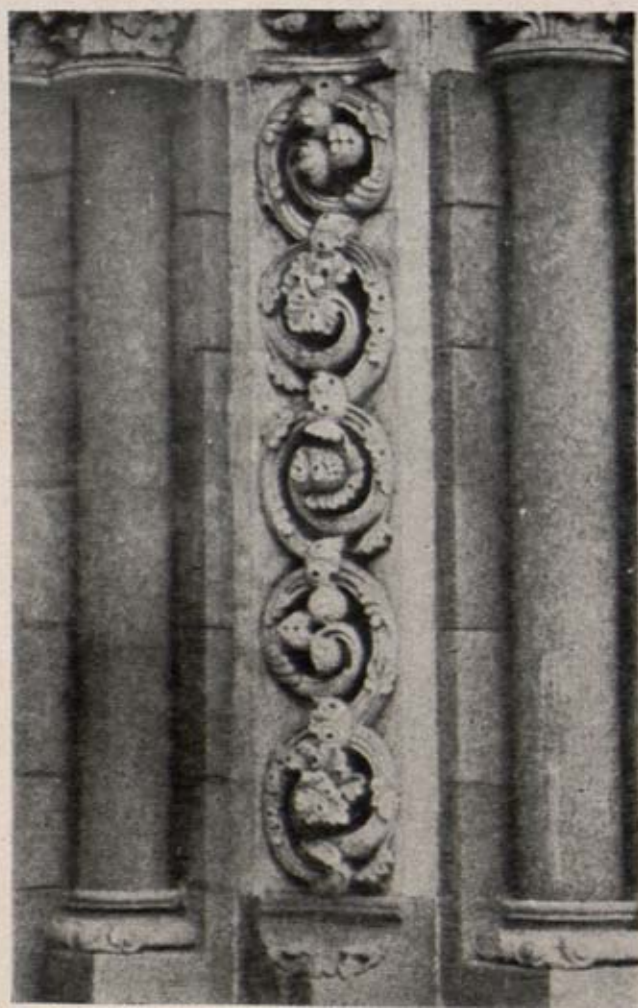
Plate 76.

Plate 77.

Plate 78.

Plate 79.
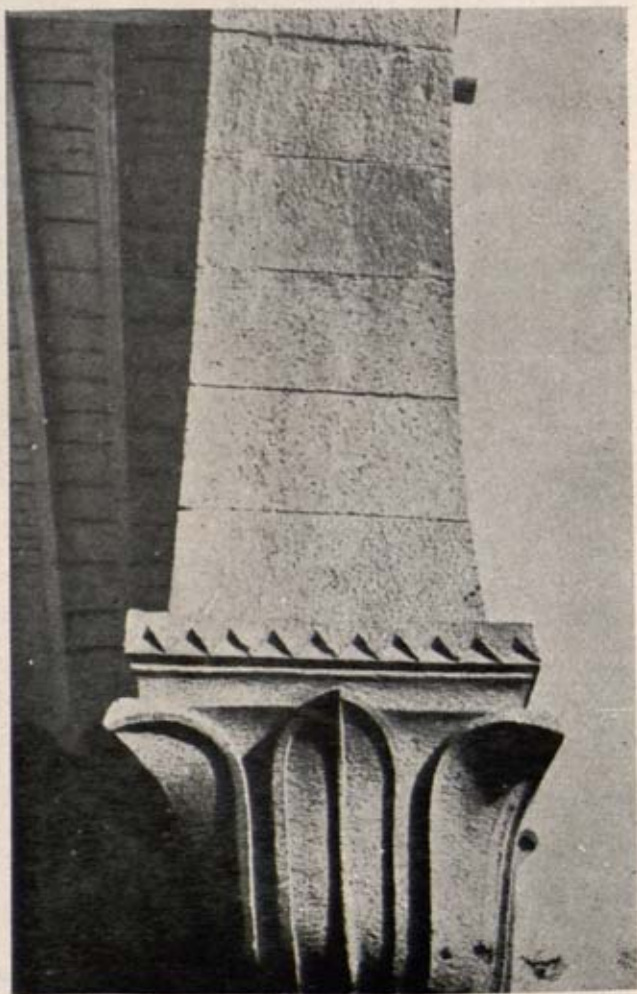
Plate 80.

Plate 81.

Plate 82.

Plate 83.

Plate 84.

Plate 85.

Plate 86