CHAPTER X
SUMMARY AND CONCLUSIONS

10.1 General

On overall review of literature, it is observed that the society, at large, desires to sustain different kinds of heritages indefinitely to satiate many of their feelings while deriving inspiration for marching ahead in several facets of life. The literature further reveals that fortunately there is no dearth of these resources in India and for that matter elsewhere in the world. The constitution of India as well as the country’s preamble inculcates a sense of responsibility to the citizens towards protection of heritages. However, due to several reasons explained in the preceding review, majority of heritages in the country, particularly those existing outside the metropolises and a few other cities; are prevailing under “Damocles’ swords”. Therefore, it is understood that conservation of heritages in places big and small needs to be ensured through an understanding of the latest approaches, legal mechanisms and management methods at various provincial levels.

Visakhapatnam city hosts rich and varied heritages, especially built during the British Colonial regime. In the backdrop of rapid urban proliferation and multitudinous industrialization, the heritage feathers in the cap of the urban sprawl needs to be kept fluttering forever through preservation and conservation on a sustainable basis for the benefit of the current as well as future generations. In order to realize this ambition, the prestigious inheritances shall be thoroughly explored in terms of their nature, characteristics, stature and condition so as to pave a smooth way for structuring a sound, dependable and long lasting management plan. Towards this attempt, work was taken up on conceiving the objectives, namely, 1) Explore built heritages of the Colonial era, 2) Characterize all possible built heritages in terms of architecture, 3) Analyze present scenario of heritage conservation, 4) Assign appropriate designation to each heritage, 5) Undertake two conditional assessment case studies and 6) Develop planning tools to aid in heritage management. Incidentally, this entire effort is first of its kind for the region and city.
10.2 Summary

In the maiden instance, provincial nature of Andhra Pradesh State followed by Visakhapatnam Metropolitan Region and its constituent urban local bodies, viz., Anakapalle, Bheemunipatnam, Visakhapatnam and Vizianagaram was sketched out and heritages in the region surveyed. The survey resulting in the inventory of heritages is based on cultural history, architectural character and environmental features considered by several researchers as the three prime parameters to qualify a historical structure as a heritage. The inventory revealed existence of 81 main heritages that derived their origin during four different historical scales, namely, Hindu/ Buddhist (200 BC to 1500 AD), Mughal (1501 to 1700 AD), Native/ Colonial (1701 to 1900 AD) and British (1901 to 1947 AD) with a numerical representation of 9, 3, 36 and 33 heritages, respectively. Of the nine heritages belonging to Hindu/ Buddhist dynasties; three are in Anakapalle, one in Bheemunipatnam and five in Visakhapatnam. Of the three heritages of the Mughal period, one is in Bheemunipatnam and two in Visakhapatnam. Of the thirty six heritages pertaining to Native/ Colonial rule; seven are in Bheemunipatnam, sixteen in Visakhapatnam and thirteen in Vizianagaram. Of the thirty three heritages belonging to British era, twenty two are in Visakhapatnam and eleven in Vizianagaram.


From literature review, it is recognised that architectural styles of heritage buildings were mainly influenced by the background, culture, aesthetics and richness
of the rulers who erected them. Hence, architectural styles can be conveniently
categorised by considering different regimes of rules or any other specificity than
power, viz., 1) British Colonial, 2) Buddhist, 3) Hindu, 4) Indo-Saracenic, 5) Islamic,
6) Lighthouses, 7) Artifacts, 8) Vernacular and 9) Scientific.

In the next stage, salient features of fifteen randomly selected British Colonial
heritages of Visakhapatnam city were characterized in terms of a) historical value
b) architectural character, c) present utility and d) current status. Characterization of
these heritages revealed manifestation of several architectural elements such as
arches, turrets, minarets, gable/ Jack arch roofs, crenellated parapet, finales and
buttresses in the structures. This exercise resulted in identification of three broad
architectural categories, namely, British Colonial style of 1801-1850, Indo-Saracenic
style of 1875-1917 and British Colonial style of 1890-1947 among city’s heritages.

In the subsequent phase, in order to evaluate the present scenario of heritage
conservation in Visakhapatnam, planning at various hierarchies, i.e., national, state
and regional and the provisions incorporated in “Revised Master Plan for
Visakhapatnam Metropolitan Region-2021” and City Development Plans were
examined. The role of urban local bodies and other agencies, namely, Department of
Tourism, Visakhapatnam Urban Development Authority, Greater Visakha Municipal
Corporation, Andhra University and Visakhapatnam Chapter of Indian National Trust
for Art and Cultural Heritage in promoting heritages and their conservation in the city
was reviewed. Based on the facts noted, overall scenario was projected through
analyses of identified heritages, Visakhapatnam Urban Development Authority’s
languor, funds allocation, sources of funds, attention suggested and opinion survey.

From literature review it is noticed that there is no specific universal procedure for
designating heritages and that each State acts on the matter based on merits identified
by it. However, majority of investigators appeared biased in awarding weightages
according to their subject choice or other preference that cannot be justified as every
heritage is important as an entire (single) entity rather than any single aspect or facet
of it (the heritage). Hence, departing from all other earlier systems; an unbiased,
logically justifiable and rationally appropriate rating system leading to designation of
British Colonial heritages identified from Visakhapatnam city was taken up to qualify
and quantify the aspects of culture, architecture, environment and condition of each heritage.

In the process, each aspect is distinguished into certain criteria that were qualified through certain attributes. The cultural aspect was categorized into four criteria, viz., a) building age, b) historical significance, c) symbolic value and d) associative character where as the aspect of architecture was discerned into a) design type, b) architectural style, c) authentic nature and d) standalone features. Similarly, while environmental aspect was categorized into a) setting, b) zone-wise compatibility c) utility-wise compatibility, d) community context and e) status; apparent soundness for itself is directly considered as representing an aspect as well as a criterion. Each of the said criteria was recognized into suitable attributes quantified through prioritized scoring. The scores of all these criteria cum aspects were summed up to obtain a total score termed as Aggregate Grading Priority Score (AGPS) that on division by the number of aspects gave rise to Heritage Grade Prioritization Index (HGPI). Four heritage grades as devised by Government of India were adopted as such and integrated with the HGPI. An index ranging from 1 to 25 was equated with Heritage Grade III, 26-50 with Heritage Grade IIB, 51-75 with Heritage Grade IIA and 76-100 with Heritage Grade I. Following this system, all heritages identified from Visakhapatnam city were designated as belonging to various heritage grades. Thus, of the 32 cultural heritages in the city, 17 fell into Heritage Grade I and the remaining 15 into Heritage Grade IIA.

During the penultimate phase, condition assessment survey of two typical British Colonial built heritages, namely, (1) Victoria Jubilee Town Hall (1904) under public-private joint ownership and (2) Tikkavarapu Laxminarayana Reddy Sabha (1939) under an institutional domain in Visakhapatnam city was taken up. From desktop case studies as well as literature review on the subject, it is understood that detailed features of various architectural elements of each heritage are essential to facilitate easier description of the building condition through visual assessment and scientific evaluation. Scientific studies were carried out using standard instruments such as infrared thermometer for recording temperature of various building materials, hygrometer for measuring relative humidity, moisture meter for finding moisture content of different building elements, Pylodin for evaluating the strength of wood,
Schmidt rebound hammer for assessing hardness of cement concrete, ultrasonic pulse velocity instrument for adjudging quality of concrete and strength testing machine for estimating stone strength.

Visual assessment of the Victoria Jubilee Town Hall revealed that the structure is in satisfactory condition despite suffering certain serious defects/damages. The built mainly suffered from dampness arising out of unsympathetic use of first floor mainly through cooking and washing activities followed by rainwater ingress through damaged/lost shingles of the turrets and stagnation over the portico. These three chief causes led to vegetation growth at places on wall exteriors further to causing much more damage to certain rafters of Madras terrace roof and plant growth on turret wall interiors as well as that over the portico. Unharmonious addition of relief rooms in the first floor too added to the trauma of dampness of Madras terrace roof. Rainwater seepage through broken tiles of the first floor galleries affected the integrity of lean-to-roof rafters thereby fostering twiny vegetation on a few of them. A portico erected during renovation of the building in 1990’s showed its impact on the northwest mid façade in the form of serious crack due to uneven distribution of static load. The findings of scientific evaluation substantiated most of these observations through quantitative differences in various parameters, mainly moisture content and hardness pertaining to the structural elements concerned. Thus,

i) Results of moisture content of interior walls of grand hall revealed that most part of the North wall is under moisture stress (with 2% content) upto 50cm from floor level.

ii) Variations in temperature (28.74±3.50°C) of roof rafters lying in different directions were found to be within normal limits.

iii) Moisture content of 20% floorboards both along the periphery and central area of the grand hall were observed to be slightly higher (13% and 15%, respectively) than permissible (12%).

iv) Moisture content of ~2% of sunshades, gallery railings, door frames/shutters and window frames/shutters was noticed to be relatively high (19%) than that prescribed in IS for a lot. But the same considered at individual level is well within tolerable limits.
v) Moisture content of gallery roof beams and rafters was recorded to be usually within the permissible limit of 20%. However, the very low moisture content (2 to 5%) of the beams HB 1, 2 and 9 and rafters SR 101 to 120, STR 124 and ER 168, 171, 173 and 174 is suspected to be risky.

vi) Pylodin penetration in some of the floorboards was measured to be >12mm while that in most of the gallery beams and rafters <12mm except in ER 160, 161 and 165 (rafters) indicating strength loss.

In the case of Tikkavarapu Laxminarayana Reddy Sabha, visual assessment disclosed that this structure is also continuing in a satisfactory physical state in spite of certain easily rectifiable defects and damages. In this instance also dampness, seepage, water stagnation and rainwater ingress are the root causes of damage to certain structural members, although the causes of their origin slightly differ from that of the former example. The main source of dampness in committee and office rooms is due to water/ rainwater stagnation owing to spill over from the failure of check valve of the water tanks erected over them coupled with leaf litter clogging of rainwater pipes and their effects manifested as erosion of clay tile finish and formation of scum/ moss, growth of plants over the mid foyer slab and development of blotches over wall interiors. Rainwater stagnating over the slab penetrates through gaps in ventilators into the main hall thereby spoiling the wall interiors. The building was subjected to loss of plinth in northern/ western sides and gain in southern side due to soil build up from repeated growth of vegetation/ recurrent laying of bituminous road and soil erosion (caused by rainwater because of undeterred declining terrain), respectively. Such loss of plinth has been leading to rainwater ingress to committee room and toilet block during monsoon and storms. The wooden door frames/ shutters of committee room and toilet block and window frames/ shutters of the later are badly spoiled by termite attack as an aftermath of the sway of rainwater and lost plinth. Rainwater also drains through the broken roof tiles into the main hall, sometimes seriously flooding it. Almost all these aberrations and abnormalities surfaced out in the scientific evaluation by way of quantitative differences in various parameters, mainly moisture content, strength and hardness pertaining to the structural elements concerned. Thus,
i) Relatively higher moisture content (1 to 2%) was recorded in the east and north walls of Committee Room, east and south walls of northern Toilet Block and west wall of southern Toilet Block thereby revealing moisture stress in these walls, particularly at 0.3m level from floor.

ii) Temperature difference noticed between the lateral (25.40±3.06°C) and terminal surfaces (26.50 ±3.35°C) was found to be in accordance with normal principles of material behaviour and that observed between rafters lying in different directions to be within normal limits.

iii) Moisture content of various door frames/ shutters (10.3±0.89% to 11.0±1.60%) and window frames/ shutters (10.3±1.77% to 10.4±2.37%) was noticed to be within the limits specified in IS. However, moisture content in general of window frames/ shutters of northern Toilet block relatively high (10-16%) depicting moisture stress in them.

iv) Moisture content of roof rafters (16.60±2.72%) was noticed to be well within the limit specified in IS. However, moisture content of east side rafters (16.00±1.97%) was deciphered to be relatively high than that in west side rafters (13.43±2.71%).

v) Pylodin penetration in a couple of eastern rafters (ESR 12 and 27) and one west side rafters (WSR 13) was measured to be >12% showing slight strength loss or excess wetting.

vi) Pylodin penetration in door frames/ shutters of Door 2; door frame of Door 8; window frame of Windows 6, 9 and 10 and window shutters of Window 7 and 8 of northern toilet block was >12% showing slight strength loss or excess wetting as above.

vii) Compressive strength as revealed by Rebound Hammer tests of Committee Slab Top (32.00±1.40 N.mm$^{-2}$), Foyer Slab Top (38.25±0.65N.mm$^{-2}$) and Office Room Slab Top (38.35±1.35 N.mm$^{-2}$) was relatively low.
Concrete quality measured through semi-direct transmission method of Ultrasonic Pulse Velocity tests was found to be excellent (4710 m/s) in the case of Central Foyer Beam, good (3650-4300 m/s) in the instance of Right/Left Foyer beams and Window Lintel and medium (3230 m/s) in the case of Left Foyer Beam.

For giving a logical end to the aforesaid issues of inventory, documentation, scenario, designation and condition assessment of cultural heritages in Visakhapatnam city, a need for a strong management base is felt highly essential for ensuring perpetuation of well conserved inheritances for the sake of human progeny. In this context, an elaborate and potent heritage management plan was proposed. A mosaic of manpower representing of an array of relevant fields as well as a potential management plan encompassing a range of effective strategies are found essential from literature to realise the cherished common goal of upholding built heritages at the pinnacle of their grandeur. Literature review also clearly pointed out that a management plan shall be critically distinguished from the legal framework and shall consist of administrators, planners, techno-scientific personnel and local representatives besides being backed up by suitable working machinery to take care of all records and documentation.

In the first place a heritage body consisting of a strong contingent of government employees, academic specialists, technical experts, legal representatives, stakeholders and volunteers was formulated. This planning organ derives its strength from the constituent functional groups that are distinguished into ‘Heritage Management Committee’, ‘Heritage Planning Committee’, ‘Heritage Technical Committee’, ‘Heritage Voluntary Committee’ and ‘Heritage Centre’. The composition and functions of these four committees and the Centre were clearly defined to aid in smooth planning, able execution and efficient management of various heritages in the city to realize the goal of best heritage conservation. In the next place, a planning approach involving survey, resources identification, characterization, documentation, designation, demarcation of conservation areas, public opinion, listing, case-wise condition assessment survey, conservation proposals, identification of benign materials, identification of suitable contractors, tendering procedures, works
implementation, appropriate utility, publicity, caretaking and maintenance, mobilization of funds and incentives was outlined.

10.3 Conclusions

1. The inventory of the eighty one builds in Visakhapatnam Metropolitan Region revealed the significance of the structures from the state and local heritage perspectives. In fact, Anakapalle, Bheemunipatnam, Visakhapatnam and Vizianagaram in Visakhapatnam Metropolitan Region deserve extra regional importance because of unique architectural edifices and styles developed in and around them due to the prevalence of Buddhist, Christian, Hindu, Islamic and Jain faiths for centuries and owing to various rules including that of the general Colonial and specific British.

2. The architectural legacies and contexts spanning over 20 centuries from Buddhist period to British era of the region still remain as a missing link in urban planning although they enormously contribute in augmenting cultural, historical, religious, social and technological knowledge base of the region. Therefore, not only all the heritages described above but also many more existing in and around Visakhapatnam Metropolitan Region must be given top priority both by the local and state governments for urgent conservation so as to preserve them for posterity without any further loss.

3. Colonization of Visakhapatnam by the British during 1801-1947 had left impeccable signs of urban planning and local architecture that are excellent cum exemplary visual evidences and virtual reminders reflecting the pragmaticality of the then military personnel and their families. The British employed local techniques coupled with their native practices to build several structures that stand now as proud, prestigious and elegant heritage possessions of Visakhapatnam city. These buildings contribute to the best of all planning methods, materials, construction techniques and maintenance intending them immortality. However, almost all of them are in dire need of immediate protection and conservation for the benefit of the present as well as future generations.
4. In order to seek appropriate and befitting legal protection to the built heritages from the government, Visakhapatnam Urban Development Authority is suggested to conduct a full-fledged inventory of all heritage resources available in the city, seek opinions/suggestions and objections from the public, carry out designation of each of the available properties, prepare detailed proposals for their conservation and send it to the state government for listing as such statutory backup effectively governs their utility, maintenance and development further to the sanction of finances and tax incentives by the government to promote the much desired conservation of the diverse heritage resources of the Visakhapatnam city.

5. Though some of these heritages were listed in the Master Plan and City Development Plans of the respective places, no serious attempt has been paid on further issues right from obtaining statutory backup to devising management practices for safeguarding these non-renewable enchanting resources.

6. A methodical approach based on an understanding of various elements depicted by the British colonial heritages under the study was developed on well found scientific lines and the process integrated with the four heritage grades suggested by Government of India, with the purpose of designating heritages in the region on acceptable terms in a most befitting manner as illustrated by thirty two examples in the present instance so that the state government gets convinced of awarding them the required statutory backup for driving home the message of good preservation of the *nulli-secundus* inheritances of the region.

7. Condition assessment survey of two significant British Colonial heritages, namely, Victoria Jubilee Town Hall and Tikkavarapu Laxminarayana Reddy Sabha in Visakhapatnam city aged 108 and 73 years, respectively revealed that the structures are perpetuating in satisfactory state due mainly to the sheer merits of construction and quality of materials rather than any preferred management practices. These prideful possessions lacking any appeal and attraction at present, very well deserve the attention of the Urban Local Bodies for the restoration of their glory and fame at the earliest. It can further be concluded that many other public and individual heritages may be meeting with the same fate.
8. Regarding conservation of the heritages in the study area, the present legal framework serves just as an instrument and as such requires a vehicle to transform its spirit into practicable working mechanisms imbibing multidisciplinary human resources. Hence, a potent heritage body embracing managerial, administrative, techno-scientific disciplines and stakeholders’ participation drawing members and experts from a wide range of fields right from history to management was formulated to serve the ultimate cause of effective preservation and conservation of the rich and varied heritages of the city.