



**DEPARTMENT OF BUILDING SURVEYING  
FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING  
UNIVERSITI TEKNOLOGI MARA**

**TECHNOLOGICAL METHOD TO CONSERVATION BUILDING  
ELEMENT**

**“WATER SUPPLY SYSTEM IN HISTORICAL BUILDING”**

**This academic project is submitted in partial fulfillment of the  
requirement for the Bachelor Of Building Surveying (Hons.)**

**ROSNAN BIN HALUS  
(2005361988)**

**OCTOBER 2008**

---

***ACKNOWLEDGEMENT***

---

Alhamdulillah, in the name of Allah, the most Gracious and the most merciful, I am definitely thanks to Allah for giving me strength and opportunity to complete this whole dissertation successfully, as to fulfil the partial requirement of the Bachelor of Building Surveying (Hons), UITM Shah Alam.

My deepest gratitude goes to my own supervisor, Assoc. Prof. Hj Amran Bin Abd, Rahman for his continuous guidance, suggestion, continuous encouragement and endless support during the course of this study. His valuable help is very much appreciated.

I would like to thank all the people who have been involved directly and indirectly with the preparation of this dissertation. Also, my precious appreciation to my parents, Halus Bin Kusa and Sriphiah Bte Pardikun. A million thanks to them for their endless encouragement over the years.

Very much appreciation to staff of Taman Budaya Kuala Lumpur building and KTMB Kuala Lumpur for their kindness and cooperation in completing this dissertation.

---

**ABSTRACT**

---

This dissertation begins by identifying the issues which are related to water supply (piping system) in a historic building.

When dealing with this topic, it was find that the layout, design and placement of piping is important, so that the building may experience least intervention.

The study involves a few chapters which cover into six (6) chapters that cover the development of the study from the background investigation and research to the final conclusions and comments. This dissertation including outlines the introduction to the subjects and objectives of the study.

The issue statements, limitation of this research are also explained respectively in the chapter 1.

Chapter 2 highlight the definition of conservation, history of conservation, background of conservation, important of conservation, listed building, significance of technological method of conservation, maintenance standard, building conserve cost and other information related to conservation.

Chapter 3 explains about the water based services involving the pipe materials, components, and operation in water supply in historic buildings.

<b>ACKNOWLEDGEMENT</b>	<b>I</b>
<b>ABSTRACT</b>	<b>III</b>
<b>LIST OF PICTURES</b>	<b>V</b>
<b>LIST OF BIBLIOGRAPHY</b>	<b>VIII</b>
<b>LIST OF APPENDICES</b>	<b>X</b>

---

## **CHAPTER 1**

1.1 INTRODUCTION	1
1.2 ISSUES	5
1.3 OBJECTIVE	7
1.4 LIMITATION	8
1.5 METHODOLOGY	8
• Primary Data	8
• Secondary Data	9
• Methodology Chart	11

## **CHAPTER 2**

2.1 DEFINITION OF CONSERVATION	12
2.1.1 PRESERVATION	13
2.1.2 RESTORATION	14
2.1.3 ADAPTIVE RE USE	14
2.1.4 RECONSTRUCTION	15
2.2 HISTORY OF CONSERVATION	15
2.3 CONSERVATION IN MALAYSIA	17
2.4 BACKGROUND OF CONSERVATION	18
2.5 IMPORTANT OF CONSERVATION	19
2.5.1 AESTHETIC VALUE	19
2.5.2 HISTORIC VALUE	20
2.5.3 SOCIAL VALUE	20

## 1.1 INTRODUCTION

The historic buildings in Malaysia are unique and attractive. Their designs can be traced from Malay, Chinese, Indian, European and Middle Eastern cultures brought by traders who came to migrate or trade in the 16<sup>th</sup> century. These buildings are valuable assets to this country for their historical values and tourism potential.

Building conservation has long been of concern, although their popular application is relatively recent in origin. In Malaysia, the practice of building conservation is considered new in the local architectural scene. In the past few years, many historic buildings have been preserved and conserved while others have been converted to become premises for a bank, restaurant, information centre or a printing office.

Before practicing building conservation, one including an architect, building contractor, planner or anyone who has the interest in saving an historic building must have a broad understanding of the field itself. This is of course to ensure that any action carried out during the conservation work is properly performed and is in accord not only with the building requirements but is within the scope of contemporary knowledge of the subject. The main purpose of this paper is to study the water based services system of the historical building in Malaysia and give the suitable technological method in its application in historical building. This includes a discussion on building materials used in the water based