

Civil Engineering Self-Learning: Vincent Chu-Q&A Method

The Vincent Chu-Q&A (VC-Q&A) method presents a systematic way to help engineers master different disciplines of civil engineering in a easy manner and within a short time.

Unlike other professionals, civil engineers are “deemed” to be equipped with a wide range of engineering knowledge. It is extremely rare that civil engineers are solely responsible for a particular field of engineering without touching on other disciplines. To put it simply, when one builds a structure, you have to understand its concrete nature, its foundation, its associated drainage and sewage infrastructure. Therefore, it is of utmost importance for civil engineers to appreciate and learn other disciplines of civil engineering other than their own expertise.

VC-Q&A Method is devised to *improve the knowledge of engineers in different fields of civil engineering*. The knowledge in each field of civil engineering is presented in question-and-answer (Q&A) format to enable engineers to easily grasp the essence and key points of knowledge in particular civil engineering fields in the shortest time. The Q&A is not intended to cover ALL aspects of knowledge in a particular field of civil engineering. In fact, it only presents the key issues, knowledge and concerns and inspires engineers to study further on these topics. In short, it serves:

Purpose 1: Given limited available time, engineers could obtain the most and relevant knowledge in a particular field of civil engineering

Purpose 2: The Q&A presentation format induces engineers to look for further knowledge. The Q&A stimulates critical thinking of engineers, inspiring them to study further.

The VC-Q&A method includes **twelve** fields of civil engineering namely, bridge works, concrete works, drainage and sewage works, marine works, foundation, roadworks, slopes and earthwork, tunneling, site investigation, waterworks, steelworks and general issues.

The VC-Q&A Method is contained in the book, “A Self-Learning Manual - Mastering Different Fields of Civil Engineering Works,” and can be downloaded from the following engineering websites:

(1) Institution of Civil Engineer (United Kingdom)

<http://www.ice.org.uk/Information-resources/Document-Library/A-self-learning-manual--Mastering-different-fields>

(2) Institute of Highway Engineers (United Kingdom)

<http://www.theihe.org/members/notice-board/>

The author, Vincent T. H. CHU, can be reached at thchu@cedd.gov.hk.

VC-Q&A MANUAL PARTIAL CONTENTS

1. VC- Q&A Method
2. Module One: Bridge Works
 - Part I: Bridge Design (Level One)
 - Part II: Construction Method (Level One)
 - Part III: Bearings and Expansion Joints (Level One)
3. Module Two: Concrete Works
 - Part I: Concrete Material (Level One)
 - Part II: Concrete Structure (Level One)
 - Part III: Construction of Concrete Structure (Level One)
 - Part IV: Tests on Concrete (Level One)
4. Module Three: Drainage and Sewage Works
 - Part I: Drains (Level One)
 - Part II: Box Culverts, Manholes and Catchpits (Level One)
 - Part III: Channels (Level One)
 - Part IV: Sewers (Level One)
 - Part I: Hydraulic Design (Level Two)
 - Part II: Cracking and Tests (Level Two)
5. Module Four: Marine Works
 - Part I: Piers and Dolphins (Level One)
 - Part II: Reclamation (Level One)
 - Part I: Marine Piles (Level Two)
 - Part II: Design of Marine Structures (Level Two)
6. Module Five: Foundation
 - Part I: Bored Piles and Mini-piles (Level One)
 - Part II: Driven Piles (Level One)
 - Part III: Pile Tests (Level One)
 - Part I: Design of Foundation (Level Two)
7. Module Six: Roadworks
 - Part I: Bituminous Road (Level One)
 - Part II: Concrete Road (Level One)
 - Part III: Paving Blocks (Level One)
 - Part I: Road Joints (Level Two)
 - Part II: Pavement Design (Level Two)
8. Module Seven: Slopes, Excavation and Earthwork
 - Part I: Slope (Level One)
 - Part II: Excavation (Level One)
 - Part III: Earthworks and Tests (Level One)
 - Part IV: Retaining Walls (Level One)
 - Part I: Soil Nails (Level Two)
9. Module Eight: Tunneling
 - Part I: Pipejacking (Level One)
 - Part II: Pipe Ramming and Microtunneling (Level One)
 - Part III: Tunneling with TBM (Level One)
 - Part I: Design of Tunnels (Level Two)
10. Module Nine: Site Investigation
 - Part I: Site Investigation (Level One)
 - Part I: Testing (Level Two)
11. Module Ten: Waterworks
 - Part I: Pipelines (Level One)
 - Part II: Thrust Blocks (Level One)
 - Part I: Water Retaining Structures and Reservoirs (Level Two)
 - Part II: Pumps and Pumping Station (Level Two)
12. Module Eleven: Steelworks
 - Part I: Bolts and Fasteners (Level One)
 - Part II: Welding (Level One)