

# R&D and Knowledge Management – A CASE MODEL

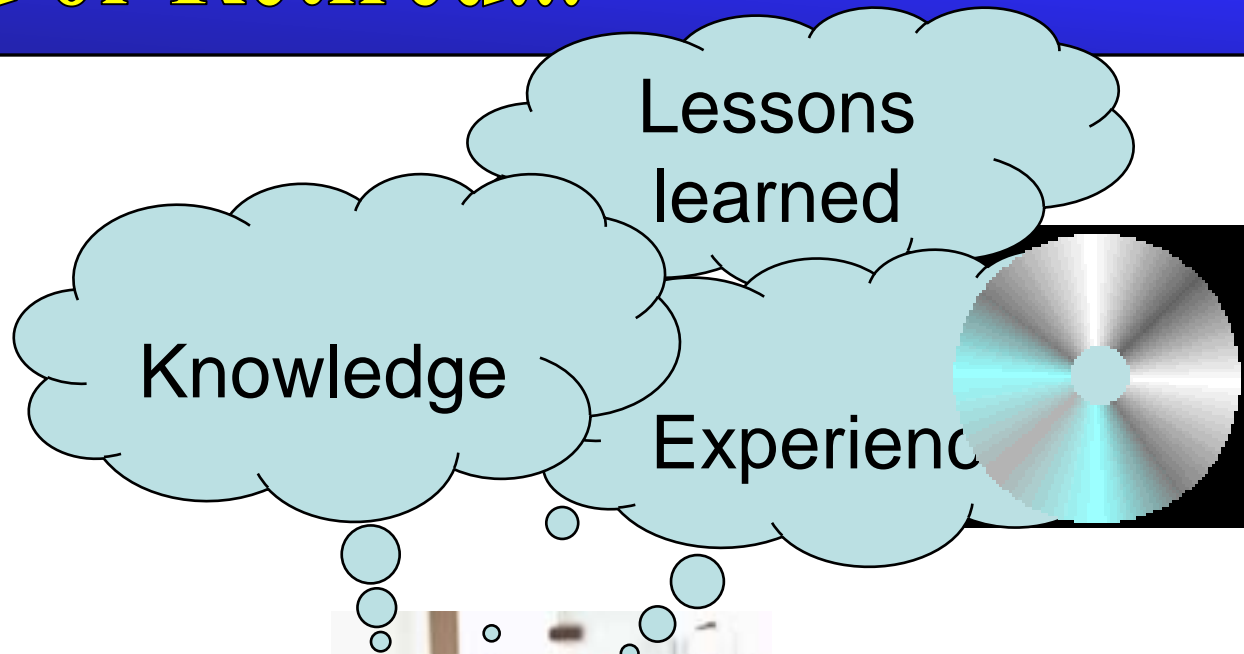
By : Ir. Dr. GUE See Sew

Date: 15 December 2011

# Contents

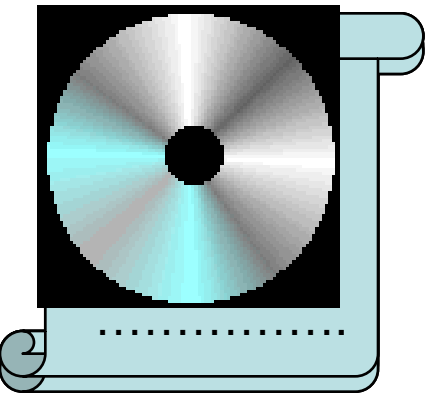
- Introduction
- How To Start
- Why R&D?
- Quality System
- Structured Training
- Conclusion

# Resigned or Retired...



***Don't you want to retain these ?***





# Intranet

and many more.....

# We Always Rely on Memory...

Sir, pls.



Hmm....  
Where is my ?!



But Sometimes...

Our Memory Could Put Us In A...

**VERY BAD SITUATION!!!!**







**Q: Sustainability?**

**Credits: Mary Leu Fine Art Carving Gallery**

We need:-  
**STRUCTURED SYSTEM KM**



# HOW TO?

## START WITH A CHECKLIST

# Developing Travel Checklist

## Travel Checklist

The following checklist can help you to prepare for your trip.

### • Trip Preparation

- Visas
- Passports - check the expiration date two months before your trip
- Vaccinations
- Hotel reservations, take along confirmation numbers
- Travel reservations, take along airplane tickets
- Travel insurance to cover the duration of your trip
- Driver's license, registration, insurance cards (leave unnecessary cards at home)
- Money or foreign currency (cash, traveler's checks, credit cards)  
Carry some emergency cash in a [neck wallet](#) or a thin sock attached with a safety pin to the inside of your underwear. (See note below for hints about keeping your cash safe.)
- Car keys, house key. (Leave unnecessary keys at home)
- Stop the newspaper and mail.  
A pile of newspapers or a stuffed mailbox tells thieves that you are not at home. You may come back from your trip to an empty apartment or house.
- Turn down thermostat at home
- Arrange for someone to water your plants and take care of your pets.  
Don't forget to leave the keys and itinerary.
- Do not pack your travel documents or money in a suitcase that may get lost. Take your important documents and money in a wallet or purse that you can access at all times.
- Make sure that your luggage has a tag with your name, address, and telephone number.
- Tie a colorful ribbon or attach distinctive stickers to your luggage so that you can identify it easily, and other travelers will not take it by mistake at a busy terminal.

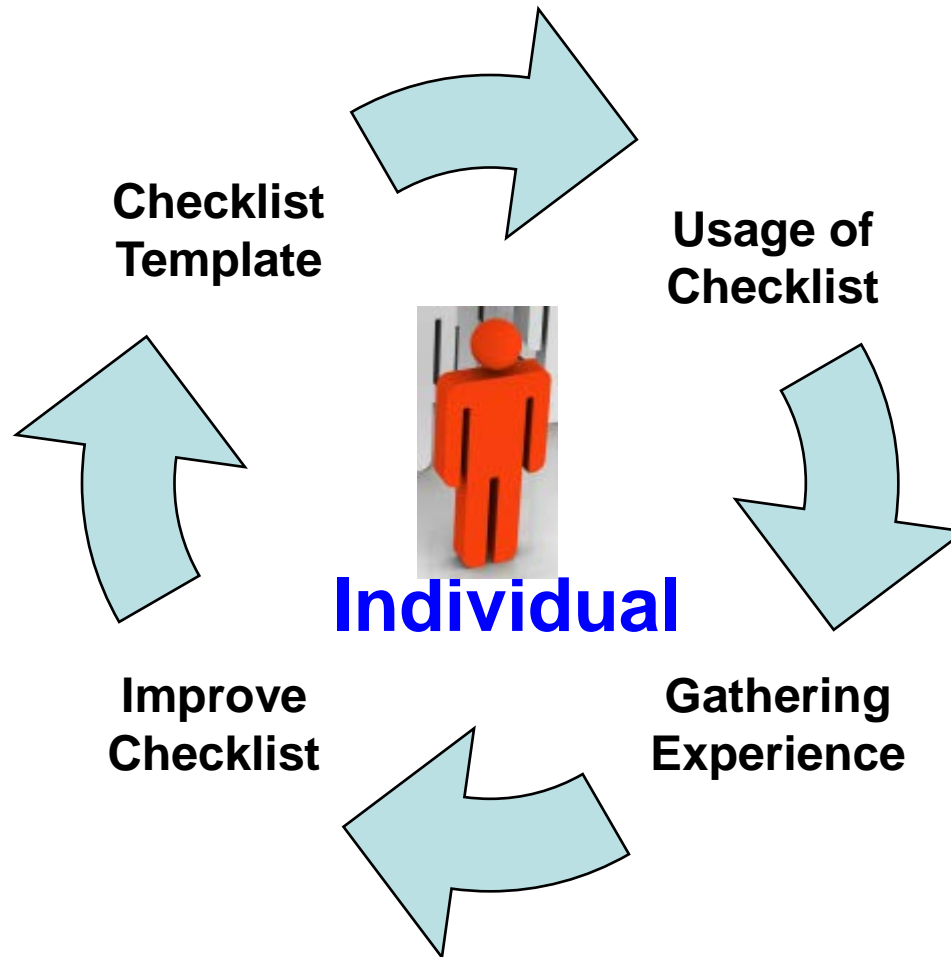


### • Personal Items

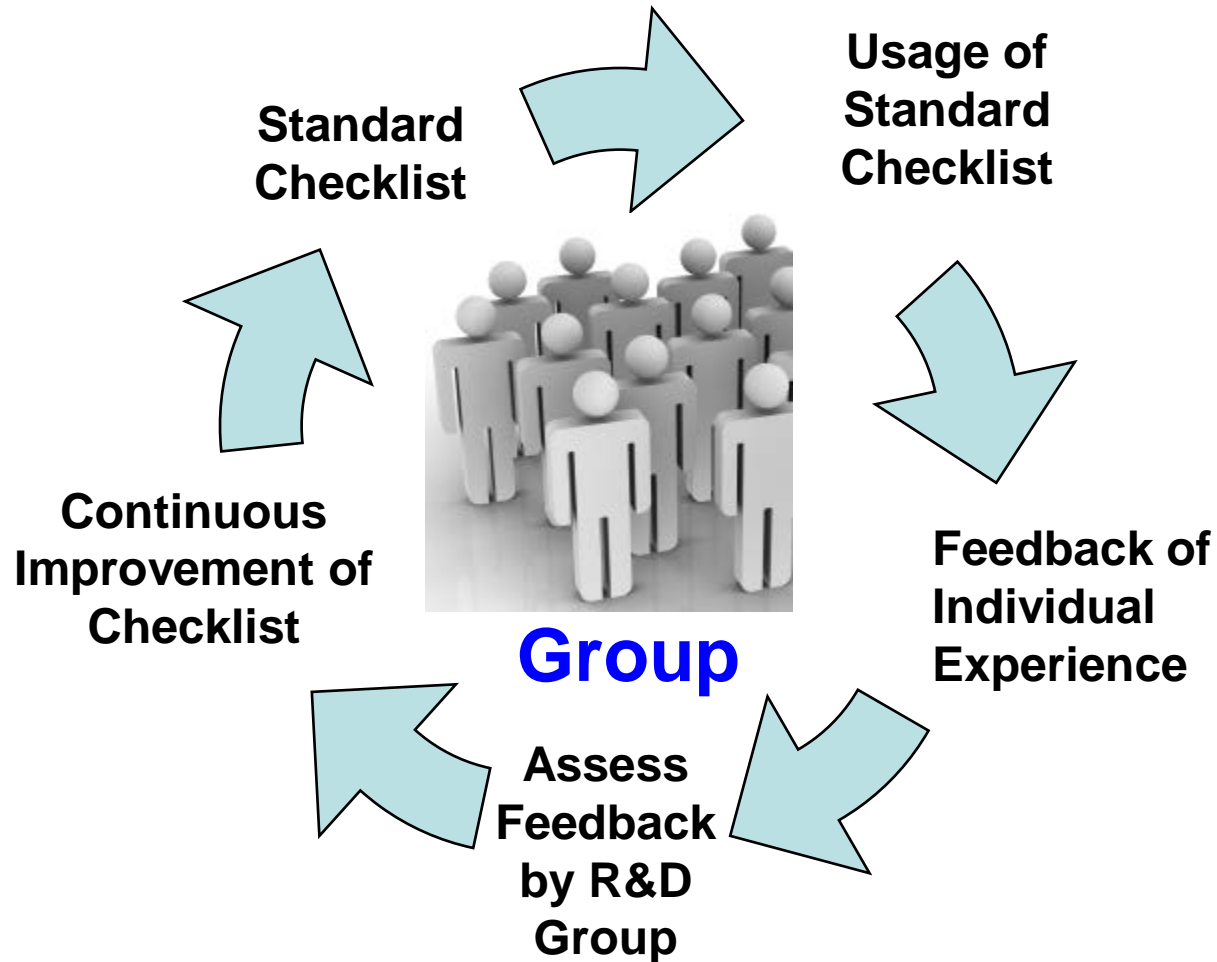
- shirts, blouses, pants, dresses, hats, coats, sweaters
- rain protection - travel umbrella or raincoat
- underwear, socks
- toiletries, cosmetics, shaving needs, deodorant, shampoo
- dental floss, toothbrush, nail clippers, nail file
- contact lens preparations
- camera, batteries, recharger, voltage converter, small flashlight, travel alarm clock, hair drier
- swimming suit, beach towels, sun block cream
- slippers
- sleeping bag, backpack
- Cell phone and charger  
A [printed list of emergency phone numbers](#) or address book may be handy if your cell phone batteries die or you lose the phone.



# Individual KMS



# Group KMS



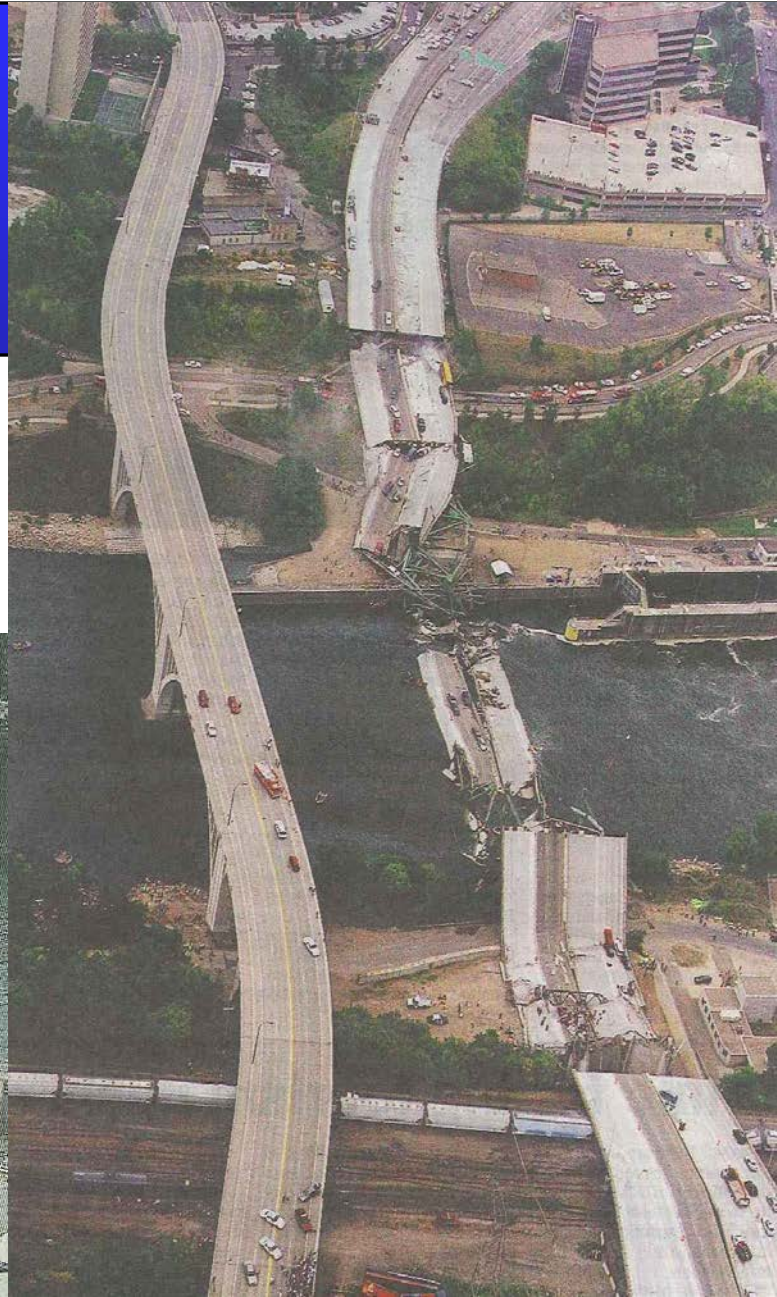
# Product Form of KMS

- Checklists
- Operating Procedures
- Standards/Operating Manuals
- Statistics
- Etc



**Lacking in KMS—  
Routine Works  
Could Go Wrong**

# Collapse of Bridge Across Mississippi River (1 August 2007)



# New Bridge Under Construction

- Collapse of Bridge in Southern Vietnam
- 26 Sept 2007



People watching at the site of the collapse of the Can Tho bridge which was under construction with the help of the Japanese in Vietnam's southern province of Vinh Long. — AFP picture

led in bridge collapse 60 kil



# Collapse of Bridge Across Tuo River, China (13 August 2007)

## 29 die in bridge collapse

Rescuers manage to save 86 in Chinese tourist town

**BEIJING:** The collapse of a bridge under construction that left at least 29 people dead in a Chinese tourist town rekindled concerns yesterday about rushed, shoddy building amid China's torrid economic expansion.

Witnesses described hearing a rumble and seeing stones fall from the structure on Monday afternoon after construction workers removed the supportive frame from the 42m-high, 268m-long vehicle and pedestrian bridge across the Tuo River in the southern town of Fenghuang.

"The whole thing collapsed," said Nong Xiaozhong, one of two survivors in a 12-man construction team working under the bridge.

"There was no time to warn the other workers and I just managed to run a few steps before I was covered under the stones," Nong said in a telephone interview from the Fenghuang Chinese Medicine Hospital where he was being treated for pain in his abdomen. "I crawled to the road nearby and an ambulance came in 10 minutes. I was rescued."

Rescuers managed to save 86 people, including 22 who were injured, many from the 123 workers on the site at the time of the collapse, the government's Xinhua news agency reported. The death toll rose steadily as rescuers with specially trained dogs and bulldozers sifted through mounds of toppled concrete.

Police detained two officials from the builder, the state-owned Hunan Road and Bridge Construction Co, Xinhua said, even as the Work Safety

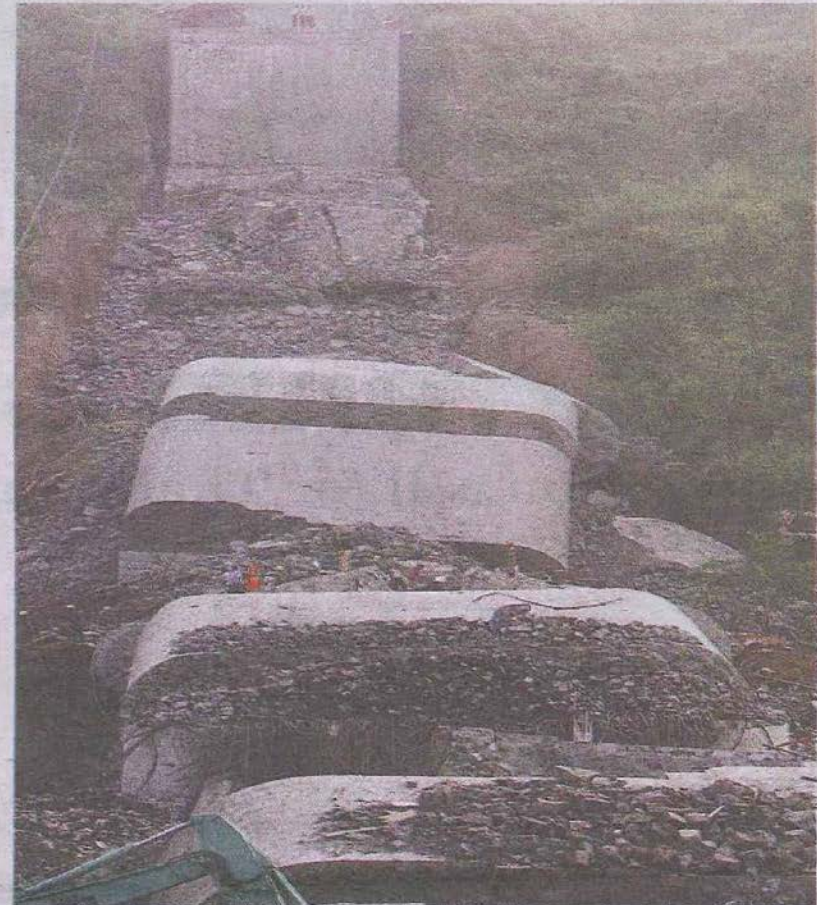
»There was no time to warn the other workers and I just managed to run a few steps before I was covered under the stones«

NONG XIAOZHONG, SURVIVOR

Administration of Hunan province, where Fenghuang is located, said the accident's cause was under investigation.

The collapse was likely to fuel already deep public concerns about the quality of construction in a country undergoing breakneck economic development and where corruption among contractors and officials is common.

The state-run *China Daily*, in a report yesterday, said that the Ministry of Communications last year deemed 6,300 bridges as dangerous because of serious damage to their "structural components." — AP



**Tragic terrain:** Rescue workers searching the collapsed bridge for survivors in Fenghuang yesterday. — Reuters

# Collapse Bridge at Sg. Kerang, Sarawak (December 2007)



# Collapse of Meru Link Flyover (10 July 2005)

## Meru-NKVE interchange collapse

- Nine workers injured, passing car damaged



There were what sounded like two loud explosions, then the two sections

# CRASHED

■ By Arman Ahmad, V. Shankar Ganesh and R. Anbu

SHAH ALAM, Sun. — Hundreds of tonnes of concrete crashed onto the Klang-bound lanes of the New Klang Valley Expressway (NKVE) when a section of a flyover under construction collapsed.

The collapse at 1.40pm today injured nine foreign construction workers working on top of the section, which fell five metres to the ground. The flyover is part of a 7.5-km interchange

TURN TO PAGE 6, COL 1



• NST pix by Fathil/Asri



*Courtesy of Judin Abdul Karim (2006)*



*Courtesy of Judin Abdul Karim (2006)*



**Do you want to prevent these?**

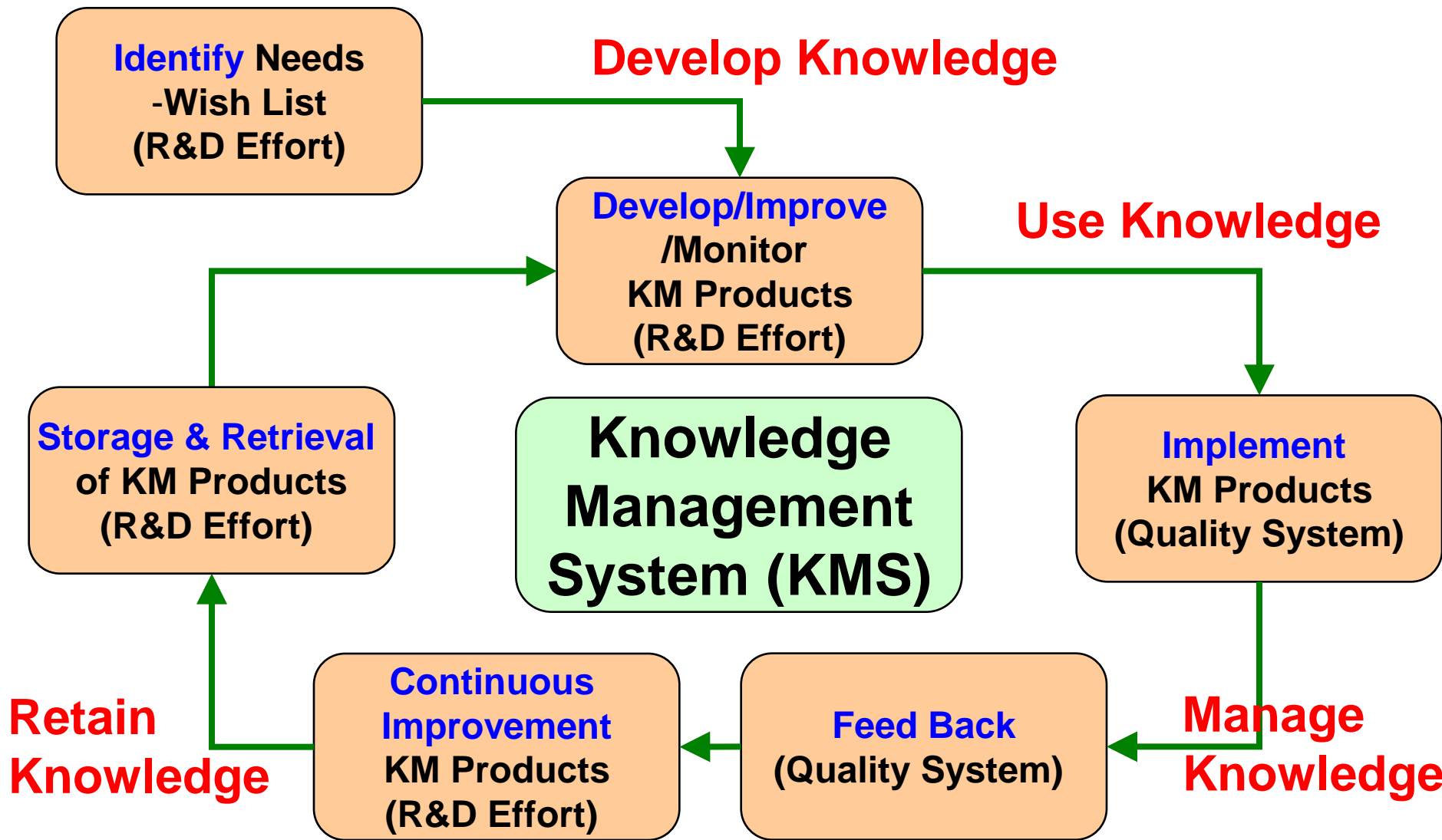
*Courtesy of Judin Abdul Karim (2006)*



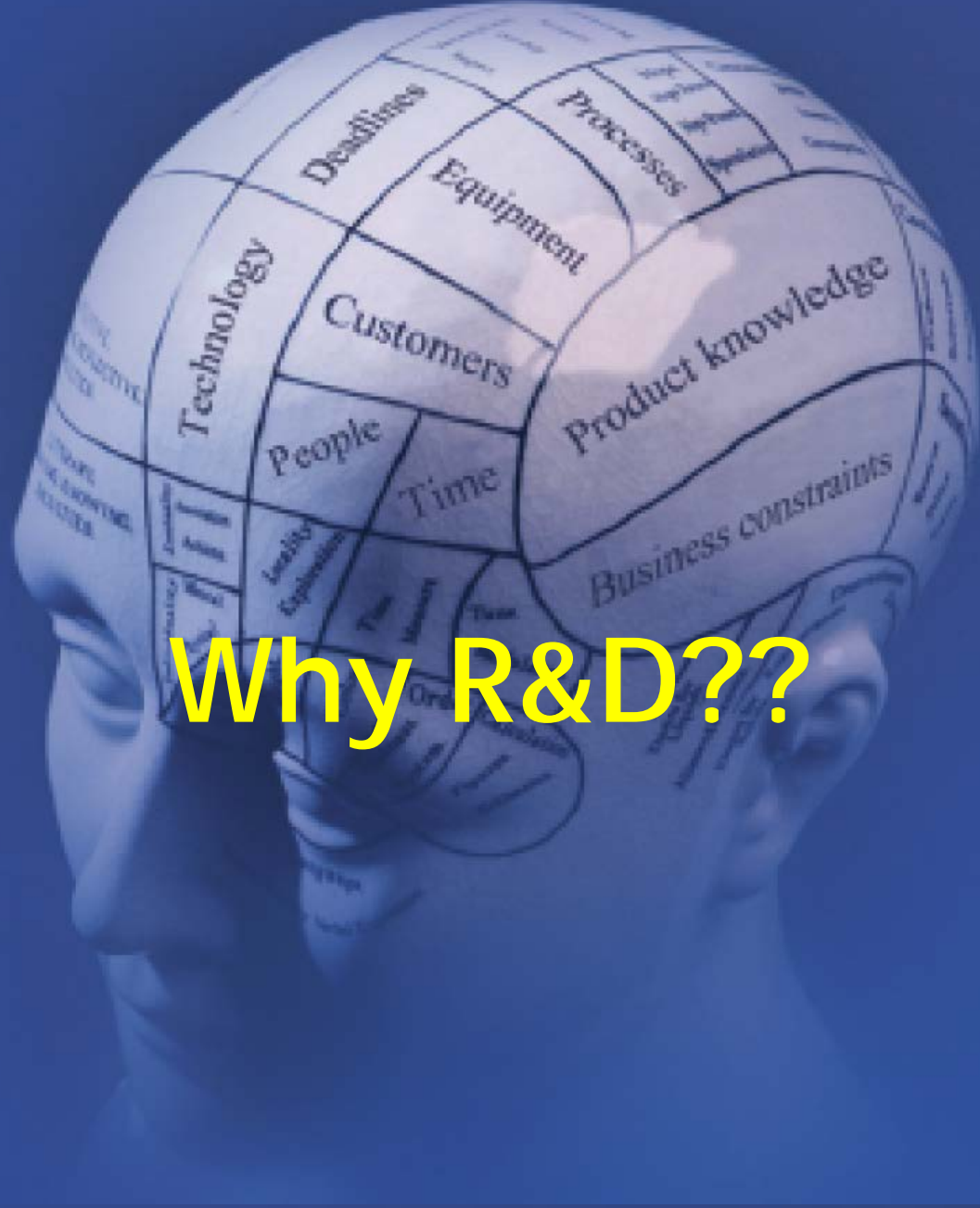
# Develop and Retain Knowledge: Research & Development (R&D)



# Knowledge Management (KM) Flow



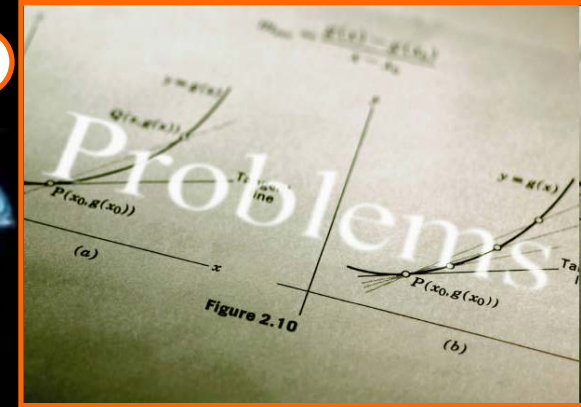




# Why R&D??



# Structured R&D



**R&D TOPICS**



# R&D Wish List

## R&D Wish List

List of Topics for Further Research by Undergraduate/Postgraduate

### C. Pile Foundations

No.	Wish-lists/ Issues	R&D Topics
1.	Do we have DOs and DON'Ts and Checklists for the following foundation works? (a) Driven and jack-in concrete piles in limestone foundation (b) Micropiles (c) Bored piles	DOs and DON'Ts and Checklists for the following foundation works: (a) Driven and jack-in concrete piles in limestone foundation (b) Micropiles (c) Bored piles
2.	What is the minimum thickness of end plate for concrete piles driven into (a) silty and sandy subsurface (b) very thick soft layer and follow-by hard materials	The minimum end plate thickness and reinforcement at pile-ends for the following subsurface conditions (a) silty and sandy subsurface (b) very thick soft layer and follow-by hard materials
3.	What is the optimum design method for end plates on large driven spun piles and steel pipe piles to prevent failure of the end plates?	End plate design for large driven spun piles and steel pipe piles into soft soil follow by dense sand deposits.
4.	Why vertical cracks on spun pile appear when driving over water and into soft ground?	Methods to prevent vertical cracks on spun piles that drive over water and into soft ground.
5.	How to overcome pile failure at joint during driving?	Method to reduce tension failure at pile joints during driving of a big cluster of piles into soft deposits and follow-by hard driving.
6.	Is the conventional design for a large piles group with negative friction on piles realistic?	New design method for large group piles subject to negative friction.
7.	What are the strain compatibility issues on micropiles?	Design of micropiles with consideration of strain compatibility.

# Benefits of R&D in KM

- Continuous improvements
- Achieving new heights
- Create new skills, instrument and technology
- Develop new technique
- etc.

# Benefits of R&D



 **Construction Time**

 **Construction Cost**

 **Profit**

# Challenge The Norm Thru Innovation To Excel



### Conventional Pile System

### Pile Strip/Raft System

Low Rise Buildings

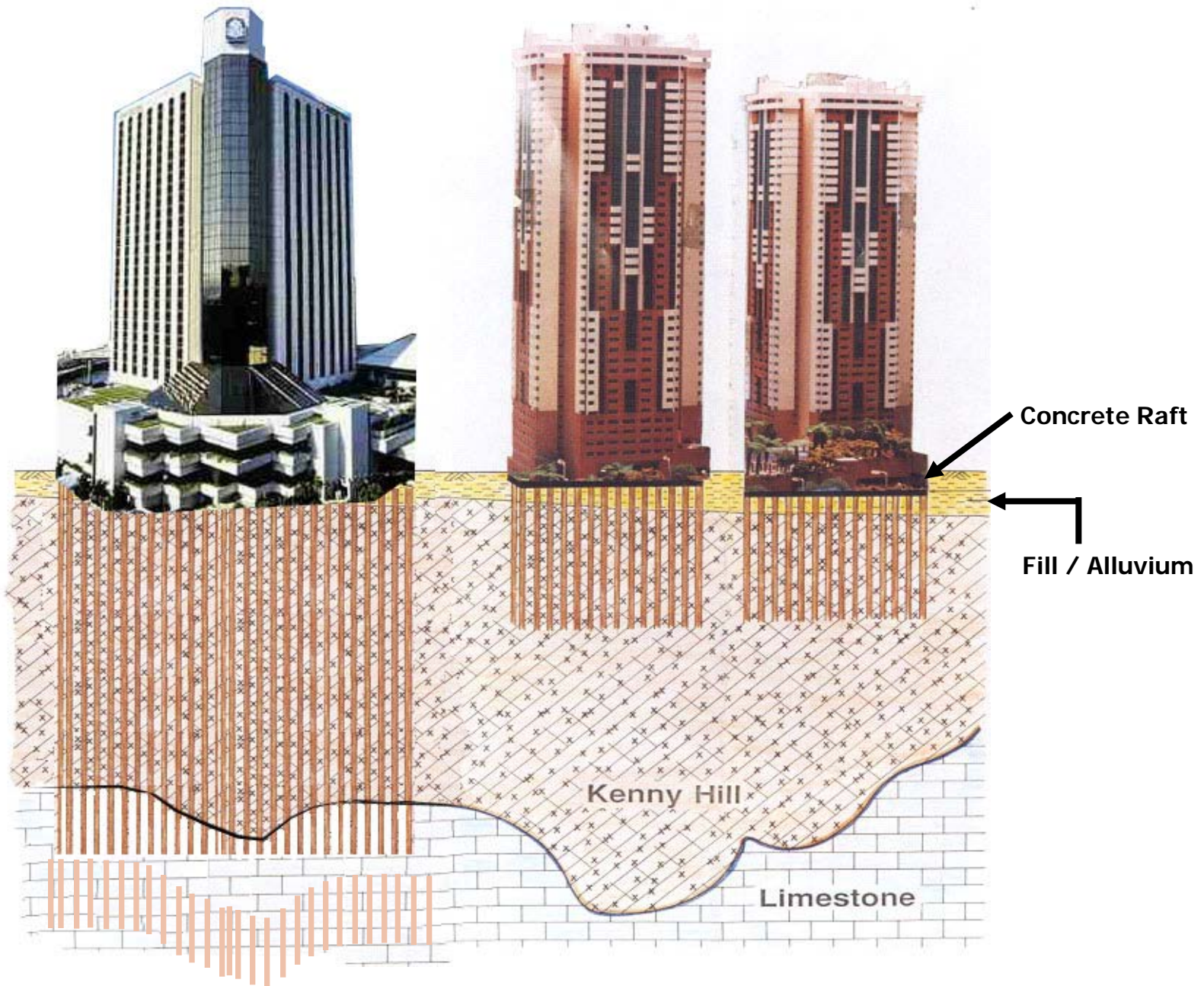


### Conventional Pile System

### Pile Strip/Raft System

Medium Rise Buildings







# APPLE STOCK PERFORMANCE FOR LAST 10 YEARS

## Apple tops target with 67% rise in profit

iPhone and iPod bolster Macintosh computer sales

**SAN FRANCISCO:** Apple Inc blew by analysts' estimates with a 67% rise in profit on Monday as the popularity of its iPhone and iPod boosted Macintosh computer sales, and its shares jumped 7%.

"There's no question that Mac sales are still having a halo effect from the iPod and iPhone," said Tim Bajarin, president of technology consulting company Creative Strategies.

Net profit climbed to US\$904mil, or US\$1.01 per share, in its fiscal fourth quarter, from US\$542mil, or 62 US cents per share, a year ago. Revenue rose 29% to US\$6.22bil.

That handily beat Wall Street's average targets of 85 US cents per share in profit and US\$6.06bil of revenue, according to Reuters Estimates.

Apple also benefited from falling prices of electronic components, lifting its gross profit margin to 33.6%. The company said it expects that to fall to 31% in its current quarter as prices for some parts start to rise again.

Apple also forecast first quarter profit of US\$1.42 per share and revenue of US\$9.2bil, ahead of the US\$1.40 per share and US\$8.7bil that were the average Wall Street targets.

"It appears that they are expecting an extremely solid holiday shopping season and, I would guess, strength from the launch of the iPhone in Europe," said analyst Shannon Cross of Cross Research.

During the quarter, Apple shipped 1.12 mil-



Shoppers making their way past an Apple

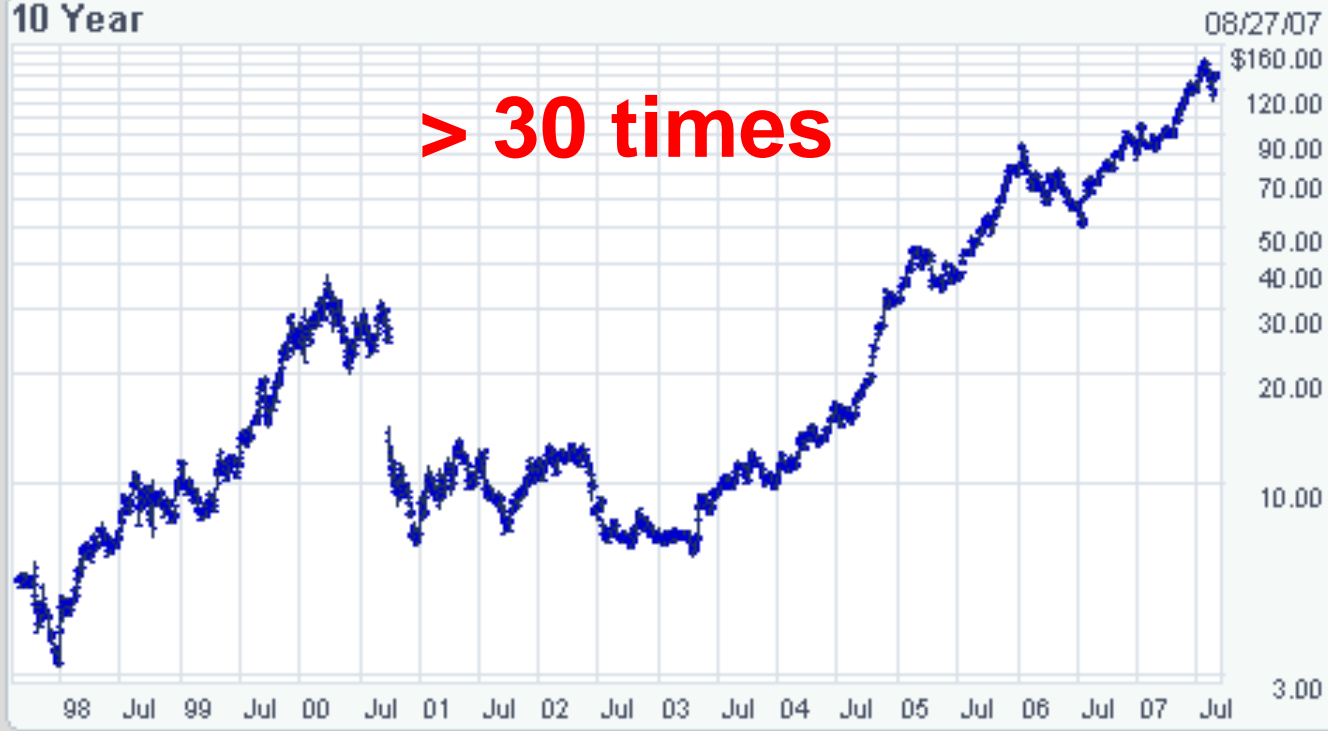
lion units of the iPhone, which went on sale in the United States in late June. That was towards the high end of analysts' forecasts.

Some investors had hoped for even better performance from the iPhone but said it could pick up following Apple's move 1 week to let users install other software on 1 devices.

"They have real value in the iPhone. I were a little disappointed in the sales num itself. More and more people will find t



10 Year





OCCUPIED

American Inventor





**R&D to Improve HSE!**

# Public Transport in Cambodia for Up To 30 Persons





# R&D RELEVANT TO INDUSTRY NEEDS



# R&D: wish list



# Convert Wish List Into Action Plan

No.	R&D Topic	Originator	Engineer	Priority	Assign. No.	Category
<b>DEVELOP</b>						
1	Supervision of Tension Pile (CH)	-	JL	1	CH1	D
2	Supervision of Pile Bending Test (CH)	-				D
3	Checklist for Crack Mapping (CH)	-	LFL	1	CH2	D
4	Design of Recharging Well (OP)	-		1		D
5	Design of Pile Group (Edge Pile Effect) (OP)	-				D
6	Design of Pile Arrangement under Pile Cap (OP)	-				D
7	Interpretation of OCR using Strain Energy Method (OP)	-				D
8	Assessment for Movement of Surrounding Ground (Boscardin & Cording, 1989) (OP)	-				D
9	Micropile Design (OP)	-				D
10	Laterally Loaded Pile Design (OP)	-				D
11	CBP/Secant Pile Wall Design (OP)	-				D
12	Soldier Pile Wall Design (OP)	-				D

**Priority**



# R&D: Develop & Monitor



# Commitment from All Levels

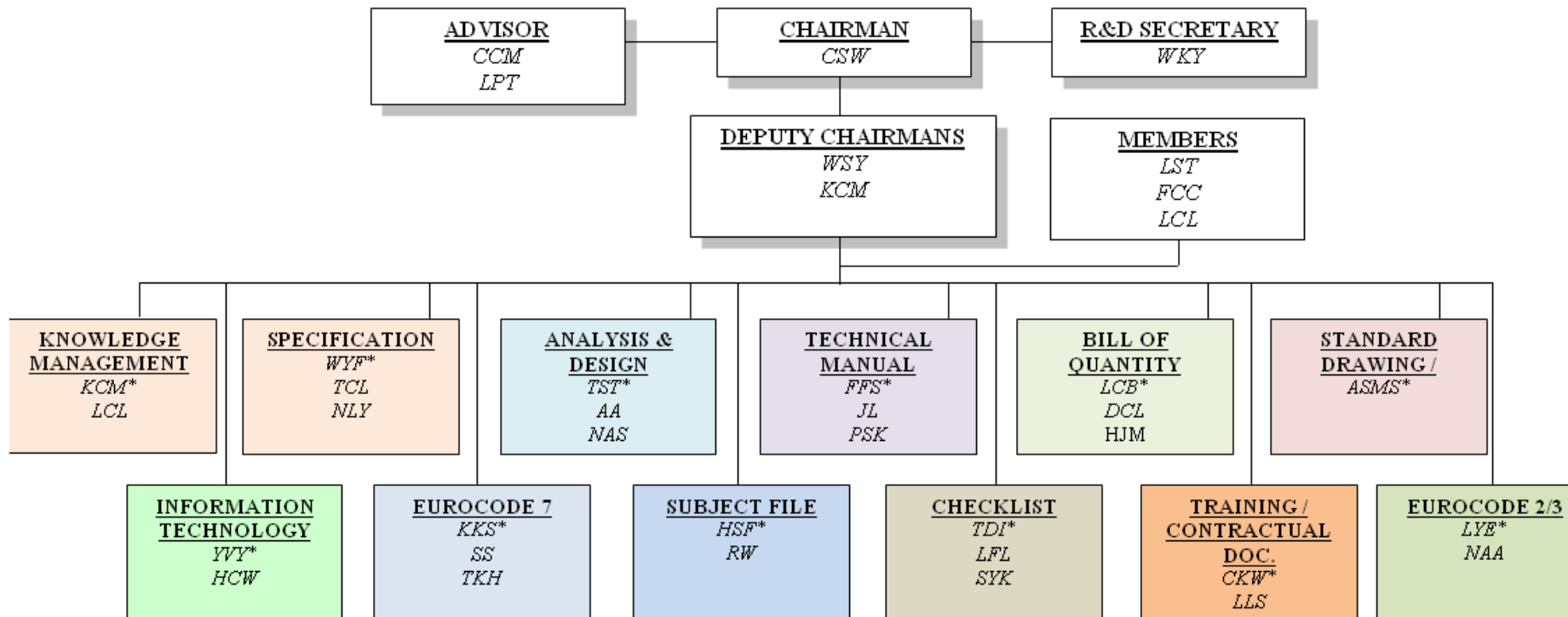
G&P Geotechnics Sdn Bhd

R&D Resolution for 2011

By: R&D Council



## R&D COUNCIL 2011



Note: \* Coordinator

# R&D Progress Monitoring



## R&D

### Analysis & Design (AD)

Progress As At **February 2010**

Total Assignments Completed **0** Ongoing **3** Overdue **0**  
 Development = 2 Verified = 8 Improvement = 2

No.	Engineer	R&D Topic	Category	Start	End	EOT	Target	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10
							Achieve						
AD1	FFS	RESBank V1.0 (DAD-119)	V	1/1/2010	30/6/2010		Target	20	30	40	70	90	100
							Achieve	15	25				
AD2	CKW	RESWall T (DAD-048)	V	1/1/2010	30/6/2010		Target	30	50	70	80	90	100
							Achieve	30	30				
AD3	ASMS	Pilecap Design (DAD-038)	V	1/1/2010	30/6/2010		Target	80	90	100			
							Achieve	85	85				
AD5	FCC/LLS	Design of Diaphragm Wall using Plaxis Output	V	1/1/2010	31/5/2010		Target	20	40	60	80	100	
							Achieve						
AD6	FCC	RESWALL C (Strip Loading Addition)	D	1/2/2010	31/5/2010		Target		20	50	70	100	
							Achieve						
AD7	FCC	SLT using Kentledge Method (Loaded Length + Base Resistance)	I	1/3/2010	31/5/2010		Target			30	60	100	
							Achieve						
	KCM	Conso Plotting (AD-013)	I				Target						
							Achieve						
	TST	Struting Design (DAD-128)	V				Target						
							Achieve						
		Modification of Iterative Curve of Axially Loaded Flexural Section / BM-N	D				Target						
							Achieve						
		RESWall C (DAD-049)	V				Target						
							Achieve						
		Ultimate Pile Lateral Capacity (DAD-096)	V				Target						
							Achieve						

Engineer/  
Geologist

R&D Topic

Commencement  
Date

Target  
Completion  
Date

Monthly  
Progress  
(%)





# Quality System

# Project File

## PROJECT FILE (MAIN FILE)

SECTIONS	TABLE OF CONTENTS	FILE(s) LINK
SECTION 1	PROJECT ASSIGNMENT PROJECT QUALITY PLAN SITE SUPERVISION PLAN PROJECT SUMMARY SHEET QUALITY RECORDS (Internal Audits, Design Review Records, Incoming / Issued Project Documents/Drawings etc.)	
SECTION 2	INCOMING CORRESPONDENCES ISSUED CORRESPONDENCES (Correspondences = Letters, Memo, Fax, Notice etc.)	
SECTION 3	MINUTES OF MEETING DISCUSSION NOTES	
SECTION 4	INCOMING DOCUMENTS / DRAWINGS	
SECTION 5	SITE INVESTIGATION (S.I. Planning, Field Tests Layout, S.I. Checklist, Site Instruction, Site Reports, Borelogs, Lab Schedule / Results etc.)	
SECTION 6	PLANNING / ANALYSIS / DESIGN	
SECTION 7	REPORTS / DOCUMENTS (Produced by G&P)	
SECTION 8	DRAWINGS (Produced by G&P)	
SECTION 9	CONSTRUCTION MONITORING TEST RESULTS INTERPRETATION	
SECTION 10	MISCELLANEOUS (Working Copies, Draft, Info etc.)	



PROJECT QUALITY PLAN

# Project Quality Plan

Prepared By : \_\_\_\_\_ Date : \_\_\_\_\_  
Reviewed & : \_\_\_\_\_ Date : \_\_\_\_\_  
Approved By \_\_\_\_\_

**A. Project Details**

Project No. : \_\_\_\_\_  
Project Title : \_\_\_\_\_  
Location : \_\_\_\_\_  
Client : \_\_\_\_\_  
Client's Contact : \_\_\_\_\_  
Date Started : \_\_\_\_\_  
(Project Assignment Date)  
Estimated Project Duration : \_\_\_\_\_



**B. Project Team**

Project Director : \_\_\_\_\_  
Project Engineer(s) : \_\_\_\_\_  
Engineer(s)/ Geologist(s) : \_\_\_\_\_  
Checker(s) : \_\_\_\_\_  
Reviewer(s) : \_\_\_\_\_  
External Reviewer(s) : \_\_\_\_\_

**C. Overall Project Organisation**

Fill up Attachment A & Attachment B

**D. Project Scope of Work (Design Input)**

.....  
.....

MEETING NOTES

Meeting  
Notes

Client :		Made by :	Date :	
Project :				
Venue :		Project No.:	No. of Pages :	
Purpose of Meeting :				Meeting No.:
Attended by :				
Time:	Departure from G&P / Home	Meeting Begins	Meeting Ends	Arrival at G&P/Home
Item	Description of Discussion		Action By	Completion Date

**PLANNING / ANALYSIS / DESIGN**

Design

Calc.

Compilation

Project No. :

Project Summary Title :

Title of Planning/Analysis/Design :

Total Pages :

Revision No. :

(shall be the same as Work Ref. Revision No)

Activity : SI / A&amp;D / PD / TC / IC / CM

Work Ref :

Designed by :  
(Initial)Checked by :  
(Initial)Reviewed by :  
(Initial)

Signature :

Signature :

Signature :

Date :

Date :

Date :

Comment (if any):

Actions to be taken:

Rectification Status:

Checklist : (Place "X" if applicable)

1)	Objective & Purpose of Planning / Analysis / Design	
2)	Concept and Method of Planning / Analysis / Design	
3)	Subsurface Information and Interpreted Parameters	
4)	Planning / Analysis / Design	
5)	Computer Filenames & Path.	
6)	Summary of Analyses Results and Recommendations	
7)	Discussions and Conclusions	

Note :

- Activity** : SI=Subsurface Investigation; A&D = Analysis & Design; PD = Project Deliverables; TC = Tender/Contract Management; IC = Interpretation of Construction Records & Test Results; CM = Changes/Modification
- Work Ref.** = XXXXX / Status%% / R++ / ### / &&& / @@@  
Where XXXXX = Project No.; Status = Check (C) or, Review (W) or, Check & Review (B) ; %% = Number of work in sequence for each project ; R++ = Revision No.(Start with R0 for each Work Ref.)  
### = Designer; &&& = Checker; @@@ = Reviewer (if any)
- From Revision No. 1 (R1) onwards, the %% number shall be the same as Revision No. 0 (R0).

**INTERNAL AUDITS REPORT & CORRECTIVE ACTION REQUEST**



<b>Audit Ref No. :</b>	<b>Project No. :</b>	<b>Date of Audit :</b>
<b>Details of Non-conformity / Potential Non-conformity by Auditor : (Yes / Not Applicable)</b> (Please quote clauses of non-conformity if any)		
<b>Auditee's Name :</b>	<b>Auditor's Name :</b>	
<b>Signature :</b>	<b>Signature :</b>	
<b>Causes of Non-Conformity by Auditee :</b> (Please quote clauses of non-conformity if any)		
<b>Project KIV/ Inactive since last ISO Internal Audit</b>		<b>Yes</b> <input type="checkbox"/>
<b>Corrective Action(s) by Auditee :</b>	<b>Preventive Action(s) by Auditee :</b>	
<b>Action Due Date :</b>	<b>Action Due Date :</b>	
<b>Implementation of the Corrective or / And preventive Action(s) has been satisfactory? (YES / NO)</b>		
<b>Comments (if NOT satisfactory) :</b>		
<b>Auditor's Signature :</b>	<b>Auditee's Signature :</b>	
<b>Date :</b>	<b>Date :</b>	

*Note : A copy shall be retained in Managing Director and Management Representative's File and also in the Project File*



**INTERNAL AUDITS CHECKLIST**

**Audit  
Checklist**

**Audit Ref. No :**

**Auditor :**

**Audit Date :**

**Project No. :**

**Engineer :**

Procedure	Activity	Compliance *	Remark
QP-2-02	Professional Service Requisition		
2.4.3	Has the Project been assigned by the Managing Director (ISO/Form-1) ?		
QP-2-03	Project Quality Plan (PQP, ISO/Form-2)		
3.4.1	Has the PQP been approved by the Project Director ?		
3.4.2	Has the PQP been completed within two weeks from the date the Managing Director assigns the Project ?		
3.4.3	Has the PQP indicated the following information : - Project Details ? - Project Team ? - Scope of Work ? - Project Deliverables ? - Organisation ?		
3.4.4	Has the PQP stated critical stages of work to be reviewed ?		
3.4.5	Has the PQP duly updated for significant changes to the project identified as in Procedure for Design Changes/Modification (QP-2-07) ?		
3.4.6	Has the PQP referred to the Procedure for Site Supervision Plan (If No, skip Items 4.4.1 to 4.4.4) ?		
QP-2-04	Site Supervision Plan (SSP, ISO/Form-3)		
4.4.1	Has the SSP been approved by the Project Director ?		
4.4.2	Has the SSP outlined the detailed scope of site work and also the associated site supervision duties ?		
4.4.4	Has the SSP duly updated for significant changes to the project identified as in the Procedure for Design Changes/Modification (QP-2-07) ?		
4.4.5	Has ISO/Form-15 been used for the nomination of contractors for Tender/ Quotation/ Direct Appointment for Projects ?		
4.4.6	Has the Contractor/ Laboratory Performance Assessment (ISO/Form-10) been submitted to CAC after completion of site work ?		
4.4.7	Have the check boxes for the "Submission of Records/Reports" in Item E (completion of Site Supervision) of Site Supervision Plan ISO/Form-3 been addressed ?		

Note : \* = Y : Complying      N : Not Complying      N.A. : Not Applicable

# Technical Manual

<ul style="list-style-type: none"> <li>Rock probing may be required at limestone formation with <u>karst</u> features, preferably at every alternate column locations.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>4.3. SOIL PARAMETER FOR DESIGN</b>			
<b><u>DO</u></b>			
<ul style="list-style-type: none"> <li>Show the subsoil profile (plotted <u>borelogs</u>) and design values (e.g. SPT or <math>S_u</math> vs Depth).</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> <li>Check on subsoil material and SPT-N values.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> <li><b>Interpreted <math>S_u</math> profile following OP-01-XX (Bjerrum Correction Factor).</b></li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> <li>Driven/Jack-in Piles - Plot contour of founding levels using Surfer.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> <li>Bored/Barrette/Micro Piles                             <ul style="list-style-type: none"> <li>- Rationalised Design Parameter.</li> <li>- Cluster Zones for Pile Design.</li> </ul> </li> </ul>			
<ul style="list-style-type: none"> <li>Estimation of Pile lengths and tabulate required pile lengths.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>4.4. LOADING AND REINFORCED CONCRETE (RC) DESIGN</b>			
<b><u>DO</u></b>			
<ul style="list-style-type: none"> <li>State the following:                             <ul style="list-style-type: none"> <li>(A) Sum of all working vertical load (without factor) = <math>\text{kN}</math></li> <li>(B) Average building footprint area = <math>\text{m}^2</math>.</li> <li>(C) Number of storey =</li> <li>(D) Average load per floor of buildings = <math>\text{kPa/storey}</math> ( <math>D = A/B/C</math> )</li> </ul>                             Note: For residential buildings, normal range of load shall be 12kPa to 15kPa per floor.                         </li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> <li>Establish Load combination with Structural Engineer (e.g. combination of dead load, live load, vertical load due to nominal and wind load).</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> <li>For Pile Provision (or Pile Allocation) exercise, working load shall be used.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	

<ul style="list-style-type: none"> <li>Setting up a new project at PAD interface. The new project should be activated in the current model by creating a new Project Database.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> <li>Decide where to run the PDS works when saving the new project (either in server or local hard drive).</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	

## G&P GEOTECHNICS SDN BHD

Section: TM-A1-12A

### Technical Manual for Design of Road Alignments using Alignment Designer(PAD) Module

Revision: 0

Date: 10-05-2005

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<p><i>Note: If PDS is running on local hard drives, project work must be back up into the server at the end of the day. The backup must preserve the exact directory structure. If the user is moving from one computer to another, the backup version in the server shall be copied to the local hard drive and again please ensure that the original directory structure are preserved for smooth operation.</i></p>			
<p><b><u>DON'T</u></b></p>			
<ul style="list-style-type: none"> <li>Once chosen the directory of where the new project to be saved, user must avoid change the location of the file unless the user is fully aware of how PDS referencing works.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> <li>Do not unde any circumstances change the name of project file from the default (E.g. \$DBU). <b>IMPORTANT!</b></li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> <li>Do not create a very deep directory structures as PDS would not be able to refer or open any folders that are more than 5 levels deep.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<p><b>12.3. DESIGNING A HORIZONTAL ALIGNMENT</b></p>			



# Intranet: Storage & Retrieval

# G&P Geotechnics Sdn Bhd

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## Documents

[Operating Procedures: Analysis & Design](#)
[Bill of Quantities](#)
[Operating Procedures: Supervision](#)
[Analysis & Design](#)
[Report Format](#)
[Specifications](#)

### Technical Manual

- [Introductory Notes to New Engineers](#)
- [Planning of Common Subsurface Investigation \(SI\) Field Testing](#)
- [Laboratory Testing](#)
- [Strength Parameters](#)
- [Deformation Parameters](#)
- [Foundation Design](#)
- [Ground Improvement](#)
- [Design of Deep Excavation](#)
- [Design of Hill Site Development](#)
- [Soil Slope Stability Analysis](#)
- [Slope Stabilisation and Retaining Structures Design](#)
- [Embankment Design](#)
- [Design of Road Alignment Using](#)

### Operating Procedures: Checklists

- [Checklist for information required before CPT-CPTU Tests](#)
- [Procedure for High Strain Dynamic Load Test \(HSDLT\)](#)
- [Checklist For Borehole Testing](#)
- [Checklist for 1D Consolidation Laboratory Test](#)
- [Checklist for Supervision of Sheet Pile Installation](#)
- [Checklist for Geotechnical Site Inspection](#)
- [Procedure for Pile Integrity Test](#)
- [Checklist for Site Visit](#)
- [Checklist for Bored Cast-in-Place Pile](#)
- [Checklist for Isotropic CIU Test](#)

### General Forms

- [Memo Form](#)
- [Fax Form](#)
- [Cover for Planning, Design & Analysis](#)
- [Drafting Activities Log Sheet](#)
- [Leave Form](#)
- [Laboratory Test Schedule](#)
- [Conference Report](#)
- [Circular](#)
- [Klinik Mano](#)
- [Employment Application Form](#)
- [Attendance List](#)
- [Despatch Form](#)
- [Site Report](#)
- [Feedback on Spreadsheet-Colloquium](#)



Address [C:\Documents and Settings\norenilia\Desktop\G&P IntraNet 3\\_0- Documents.mht](file://C:\Documents and Settings\norenilia\Desktop\G&P IntraNet 3_0- Documents.mht)

Go

- [Opinion](#)
- [Dam Design](#)
- [Design of Tension Pile](#)

### Operating Procedures: Analysis & Design

- [Design Procedure for Bored Pile](#)
- [Retaining Wall Design For Excavation](#)
- [R.C. Design For Diaphragm Wall](#)
- [Embedded Retaining Wall Design to BS8002](#)
- [Evaluation of Liquefaction](#)
- [Evaluation of Subgrade Material for Roads](#)
- [Procedure for Design of Embankment](#)
- [Procedure for Shear Strengths Parameters from Back-Analysis of Single Slips](#)
- [Simplified Piled Raft Analysis via Equivalent Pier Approach](#)
- [Pile Raft Design](#)
- [Design of Geogrid for Piled Embankment to BS8006](#)
- [Filter Design](#)
- [Concrete Mix Design](#)
- [Methodology for Evaluation of Soil Parameters from Pressuremeter Test \(Clays\)](#)
- [Estimation of Travel Distance Angle for Rapid Landslides](#)
- [Interpretation of Instrumented Test Pile Result](#)
- [Design of Reinforced Soil Wall](#)

- [Site Supervision of Soil Investigation](#)
- [Supervision of Diaphragm Wall Construction](#)
- [Supervision of Bored Pile Construction](#)
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- [Supervision of Pile Driving](#)
- [Supervision of Ground Anchorr](#)
- [Static Pile Load Test Supervision](#)
- [Supervision of Vertical Drains Installation](#)
- [Supervision of Excavation & Casting of Blinding Concrete](#)
- [Supervision of Sheet Pile Installation](#)
- [Checklist for Strutting Works](#)
- [Checklist for Soil Nailing Works](#)
- [Checklist for Rock Toe](#)
- [Checklist For Concreting Works](#)
- [Checklist for Earthwork](#)
- [Checklist for Supervision of Stone Column Construction](#)

### Operating Procedures: General

- [Role of Checker & Reviewer](#)
- [Safety Measures for Site Personnel](#)
- [Report Writing](#)
- [Project Filling System](#)
- [Failure Investigation](#)
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- [Planning of Site Investigation](#)
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- [Standard Guideline for Design & Analysis Spreadsheet](#)
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- [Projects Monitoring Scheme Record](#)
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- [Spreadsheet Registration Form](#)
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- [Printing Requisition](#)
- [Record of Standard Documents](#)
- [TOC for Standard Documents](#)
- [verification Claims Checklist](#)
- [Letter Template](#)
- [Labels for Large Arch Files](#)

### Other Forms

#### Claim Sheets:

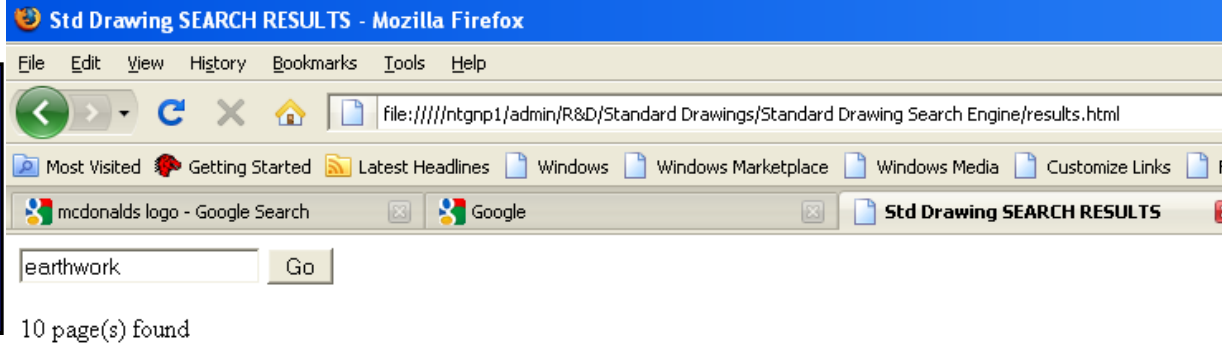
- [Receipt Sheet](#)
- [Rates](#)

### Report Format

- [Disclaimer for Reports](#)
- [G&P Report Cover 2nd Page \(Client\)](#)
- [G&P Report Cover 2nd Page \(Office\)](#)
- [G&P Report Cover](#)
- [List of Tables & Figures](#)
- [Plain Paper Report Cover](#)
- [FIGURE A3](#)
- [FIGURE A4 Landscape](#)
- [FIGURE A4 Portrait](#)
- [REFERENCES](#)
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- [TABLE A3](#)
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# Search Engine



1. [Typical Benching Details for Embankment on Existing Ground Slope Exceeding 15%](#)  
Earthworks, Drainage blanket, Embankment, Fill
2. [Recharge Well](#)  
Earthworks, Recharge well
3. [Configurations of Fill Embankments](#)  
Earthworks, Embankment, Vertical drain
4. [Fill Embankment with Rock Toe](#)  
Earthworks, Embankment, Rock toe, Draining mattress
5. [Alternative Design for Embankment Construction](#)  
Earthworks, Embankment, Cross-sections, Settlement gauges, Displacement markers
6. [Alternative Design for Embankment Construction](#)  
Earthworks, Embankment, Construction sequence, Stability chart
7. [General Drawing Notes for Hill-site Earthworks](#)  
Earthworks, Drawing Notes, Hill-site
8. [Typical Construction Stages for Cut Slope](#)  
Earthworks, Sequence, Cut slope
9. [Typical Construction Stages for Fill Slope](#)  
Earthworks, Sequence, Fill slope
10. [Typical Construction Stages for Reinforced Soil Wall](#)  
Reinforced Soil Wall, Sequence, Hill-site, Earthworks



# Structured Training

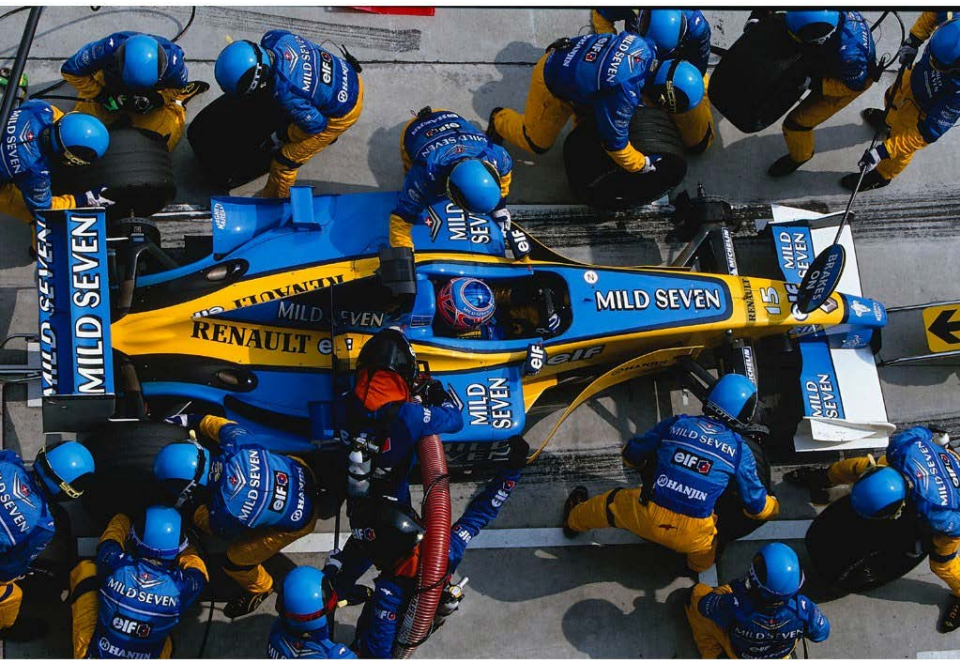


# SUMMARY OF TRAINING SCHEDULE

Topic	Lecture	Date	Title	Presenter	Status	Delivered Date
Basic Soil Mechanics	1	4/3/2011	Effective Stress	TYC	DELIVERED	4/3/2011
	2	7/10/2011	Shear Strength	TYC		
	3	24/6/2011	Stress in Soil Masses/Stress Path (Part 1)	TYC	DELIVERED	24/6/11
	4	8/1/2011	Stress in Soil Masses/Stress Path (Part 2)	TYC	DELIVERED	8/1/2011
	5a	15/7/2011	Introduction to Critical State Soil Mechanics (Part 1)	TYC	DELIVERED	15/7/11
	5b	29/7/2011	Introduction to Critical State Soil Mechanics (Part 2)	TYC	DELIVERED	29/7/11
	6	9/12/2011	Soil Classification	CCM		
	7	19/8/2011	Permeability & Seepage	WSY	DELIVERED	19/8/11
	8	26/8/2011	Deformability/Consolidation	CSW		
Design Applications	9	9/9/2011	Compaction	LSS		
	10	23/9/2011	Soil Slope Stability	LSS		
	11	8/7/2011	Rock Slope Stability	TCN	DELIVERED	8/7/11
	12	21/10/2011	Retaining Structure	WYF		
	13	15/1/2011	Basement	CCM	DELIVERED	15/1/11
	14	18/11/2011	Ground Improvement	SS		
	15	12/2/2011	Shallow Foundation	CCM	DELIVERED	12/2/11
	16	16/12/2011	Settlement Analysis	HSF		
	17	30/12/2011	Deep Foundation	LCB		
In-situ Tests	18	4/11/2011	Standard Penetration Test	KCM		
	19	18/3/2011	Mackintosh Probe	KCM	DELIVERED	18/3/11
	20	8/1/2011	Permeability Test	CKW	DELIVERED	8/1/11
	21	15/4/2011	Vane Shear Test	LPT/SS	DELIVERED	15/4/11
	22	29/4/2011	Point Load Test	LST	DELIVERED	29/4/11
	23	13/5/2011	In-situ Density Test	LSS	DELIVERED	13/5/11
	24	27/5/2011	In-situ CBR Test	LSS	DELIVERED	27/5/11
Special Tests	25	13/1/2011	Cone Penetration Test (CPT/CPTU)	TDI		

# COLLOQUIUM SCHEDULE

Name of Staff	Date	Title of Talks	Confirmed	PPT File Submitted on
MS. TEI CHEW LING	3/01/2011	Procedure for PQP	YES	
MR. CHOW CHEE MENG	3/01/2011	Eurocode 7: Introduction + Basic Concepts	YES	
MR. CHEAH SIEW WAI	3/01/2011	Eurocode 7: Design Approaches + Serviceability	YES	
MR. CHEAH SIEW WAI	17/01/2011	Foundation Design and Consideration for Large Diameter Storage tank	YES	
IR. DR. GUE SEE SEW	24/01/2011	Knowledge Management – What, Why & How	YES	Postponed because went overseas
MR. SAIFUDDIN SHEAFI	31/01/2011	Rock Analysis	YES	
IR. TAN YEAN CHIN	21/02/2011	ISO 9001 Overview	YES	
MR. CHOONG KEAN WUI	21/02/2011	Eurocode 7: Spread Foundations	YES	
MR. ASIF BIN ABDULLAH SHAH AIMIN	21/02/2011	Eurocode 7: National Annex + other related documents	YES	
MR. KOO KUAN SENG	28/02/2011	Investigation on Embankments Failure and Abutments Movement for Proposed B18 Road from Simpang 3 to Jenderam, Dengkil	YES	
IR. LIEW SHAW SHONG	6/03/2011	An Introduction to ISO Standard	YES	New staff to attend
MR. HO SHU FENG	6/03/2011	Eurocode 7: Piled Foundations	YES	
MR. LIM FANG LIANG	6/03/2011	Eurocode 7: Retaining Structures	YES	
MR. TING DENG ING	13/03/2011	Evaluation of Tank Settlement	YES	
MR. MOHAMAD RAZALI	27/03/2011	Soil Reinforcing Mechanisms in Wall & Slope	YES	
MS. HO PUI MOON	3/04/2011	Procedure for Design Control	YES	
MR. JEREMY LIM WEI	3/04/2011	Eurocode 7: Ground Anchorages	YES	
MR. TING DENG ING	3/04/2011	Eurocode 7: Other Chapters + FEM	YES	
MR. CHOW CHEE MENG	10/04/2011	Design of Offshore Piles	YES	
MR. HO SHU FENG	17/04/2011	Problems Associated with Driven Pile Foundation	YES	
MS. YONG PEI MING	24/04/2011	Deep Excavation	YES	
MS. CHRISTINA GOH PIK HSIA	8/05/2011	Procedure for Project Quality Plan	YES	
MS. TAN SJE TENG	22/05/2011	Landfill	YES	
DR. WONG SHIAO YUN	15/05/2011	National Slope Master Plan – R&D	YES	
MR. FONG FEI SEONG	29/05/2011	Instrumental Test Pile	YES	
MR. HO SHU FENG	5/06/2011	Procedure for Internal Quality Audit	YES	



RENAULT

# R&D, Teamwork & Strategies at their best



# Conclusions

- Start at **individual** level
- Further develop to group (**Company**) level
- **Identify** needs
- **Develop** & improve KMS
- **Implement** KMS
- **Feed back** for improving KMS
- **Easy retrieval** of Info

# Thank You for Your Attention

