PROPOSED MODEL FOR A SUSTAINABLE ENGINEERING CONSULTING FIRM

Mô hình đề xuất cho Công Ty Tư Vấn Kỹ Thuật Ứng Dụng Bền Vững

By

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G&P Professionals Sdn Bhd

CONTENTS

a) Introduction
b) Ownership/Partnership
c) Quality Management System (QMS)
d) Capacity Building
e) Conclusion

INTRODUCTION

1. What is the Essence of a good engineering consulting firm/group ?
2. How to assure Sustainability of a firm/group ?
3. Why do we need "Quality Management System" (QMS) ?
4. How to achieve Capacity Building ?

ESSENCE

of a Good Engineering Consulting Firm/Group

- **MISSION**

  :- "**Q**"uality
  "**S**"peed → ***QSVa***
  "**Va**"lue Adding

- **Action Plan**

  = Take Action + Closely Follow Up

  -monthly

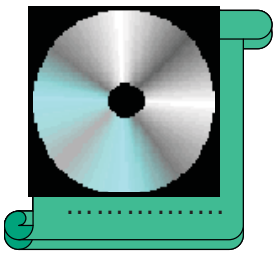
Common Problems of Sustainability

- No Pre-set *Retiring Age*
- Failure to groom successors / ownership
- Loss of good experienced engineers
- No system on retaining knowledge & experience gained

  → Fragmentation of Consulting Firms

Resigned or Retired...

Don't you want to retain these ?



Intranet

and many more…….

Solution = Ownership / Partnership

- A systematic way to groom experienced engineers
  - → Ownership.
- Ownership / Partnership Agreement
  - → Prevent dispute and confusion.
    - → ***incentives***
- Pre-set Age of Retirement for Owners
- Promote & made partners
  - → Anchoring Force.

ACHIEVE SUSTAINABILITY !

Quality Management System
QMS

Quality Management System
QMS

SYSTEM

Dr. Edwards Deming

85%/15% → 96%/4%

Error due to lack of system or improper system

Human Error

Problems were built into the way work was done

ISO 9001 :2000 Quality Management System.

Quality Management Principles :

Principle 1 = **Customer –Focused Organisation**

Principle 2 = **Leadership**

Principle 3 = **Involvement of People**

Ownership & Training !!!!

FOR SUSTAINABILITY

Don’t go for the whole small cake.
Instead, go for a slice of big cake.

TRAINING MODULES

"Do not be afraid to teach your disciples all your 10 skills. In the unlikely event one of them manages to master all 10 skills, you would have acquired your 11."

ctl2000

Codified Approach
= Systematic

- ***Colloquium***
- ***Structured Training***

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Continue : Quality Management Principles

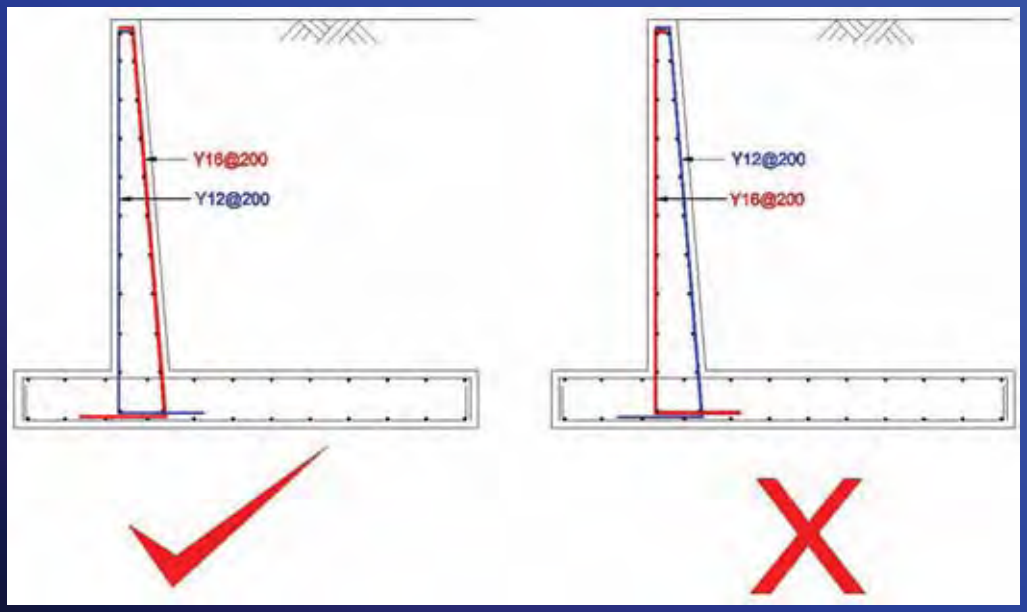
ISO 9001 :2000 Quality Management System.

Quality Management Principles :

Principle 4 = **System Approach**

Efficient management of resources and activities.

→ Check & Review !!!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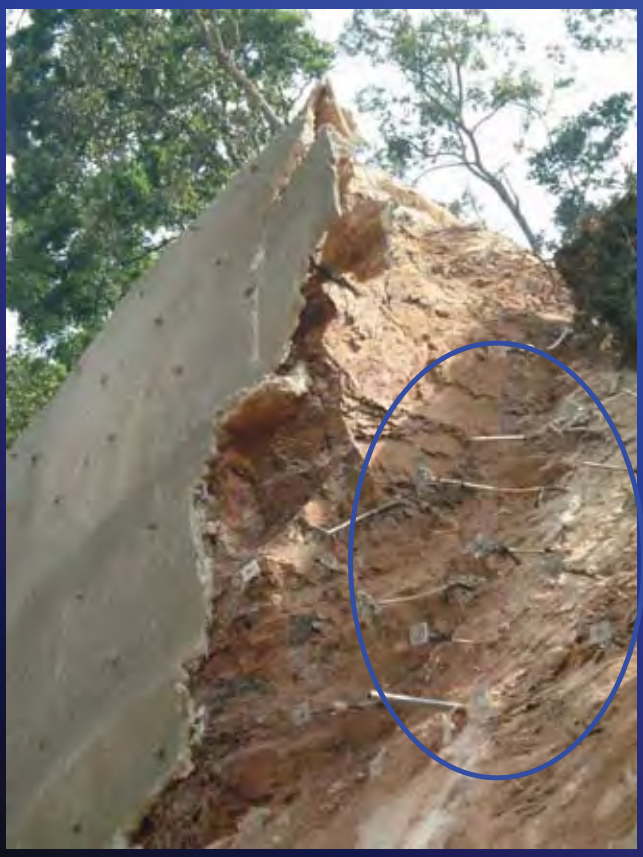

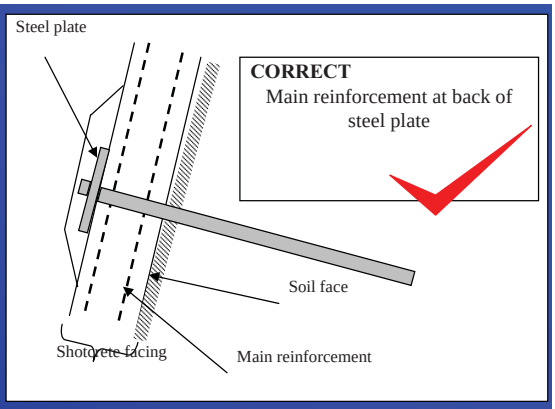

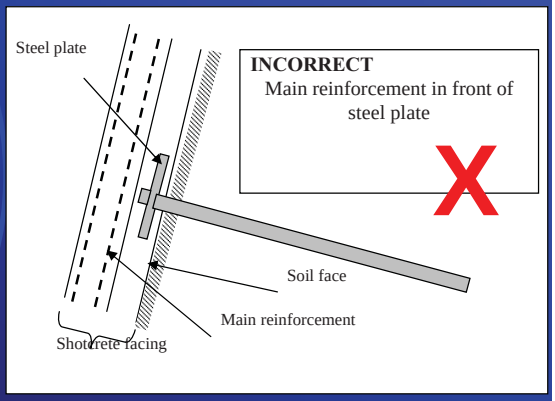

FACE FAILURE

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Continue : Quality Management Principles

ISO 9001 :2000 Quality Management System.

Quality Management Principles :

Principle 5 = Continual Improvement

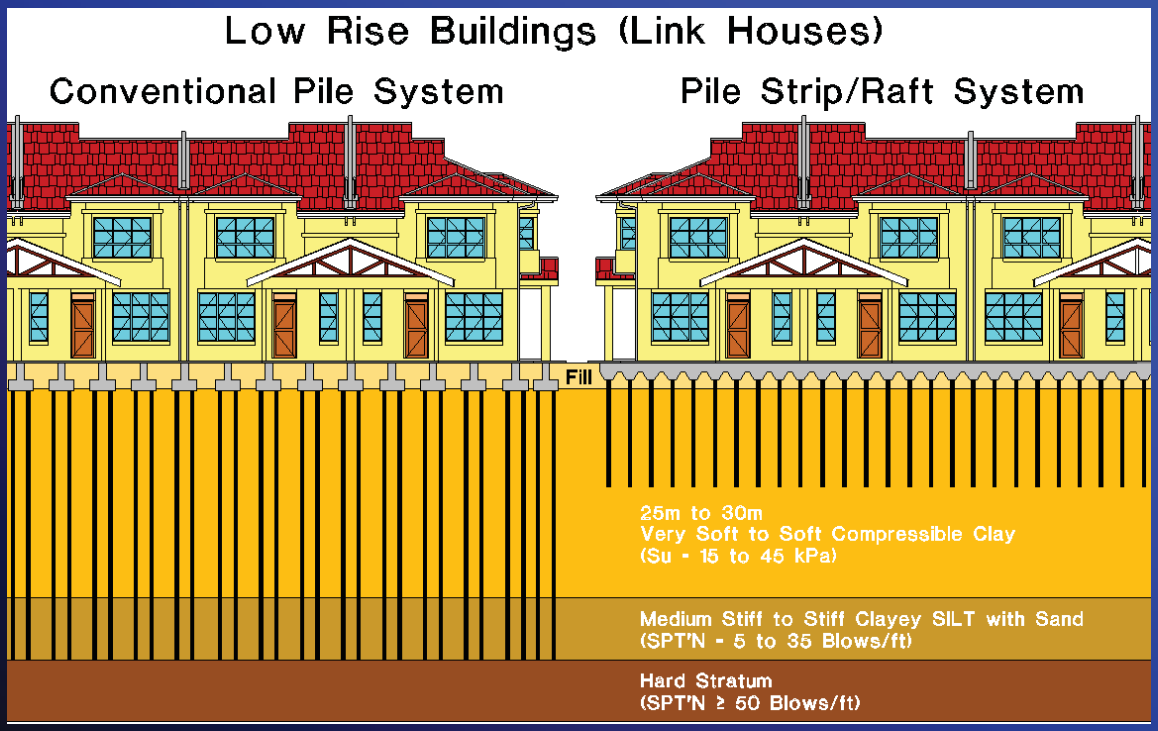
All resources (human, infrastructures and environment) → Competitive.

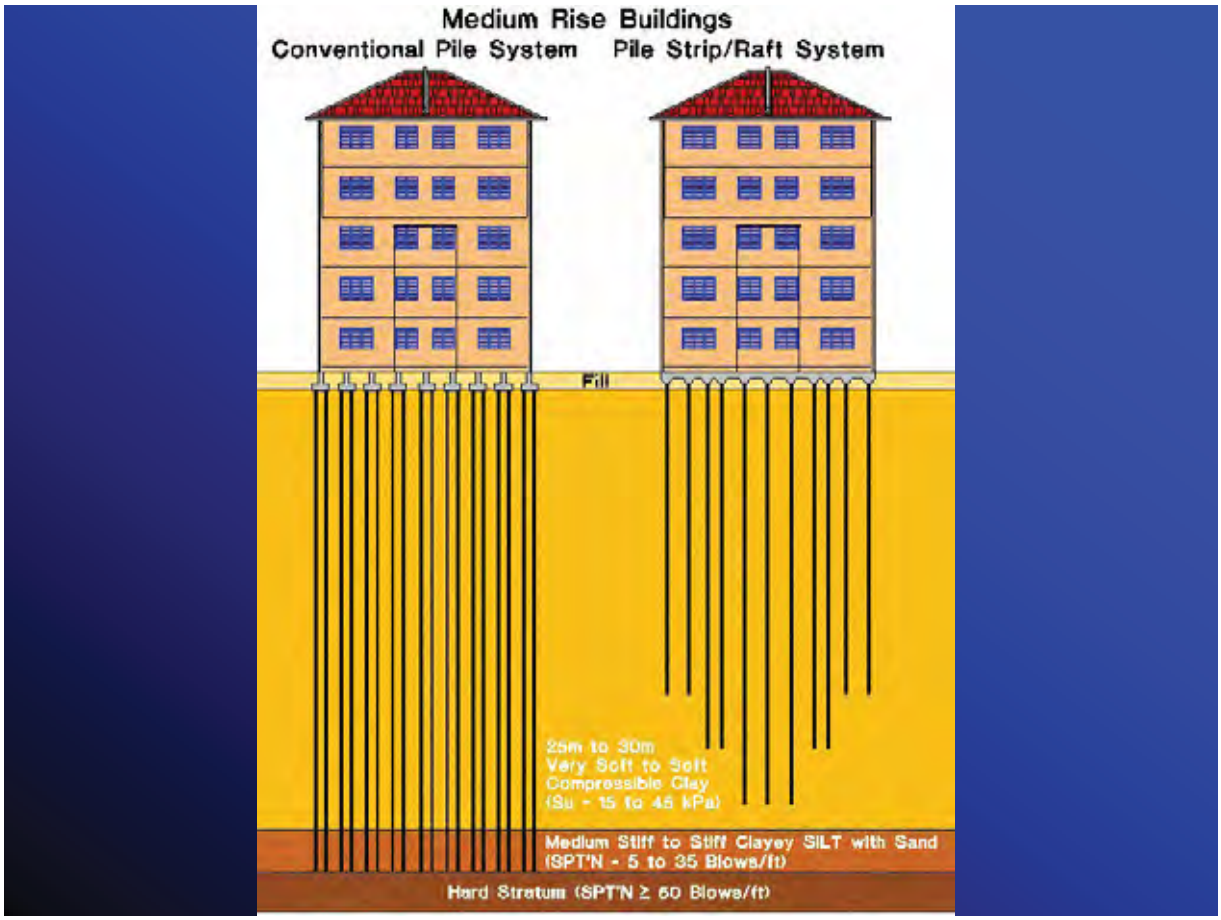
Research & Development

(R&D) !!!

Challenge The Norm Thru Innovation To Excel

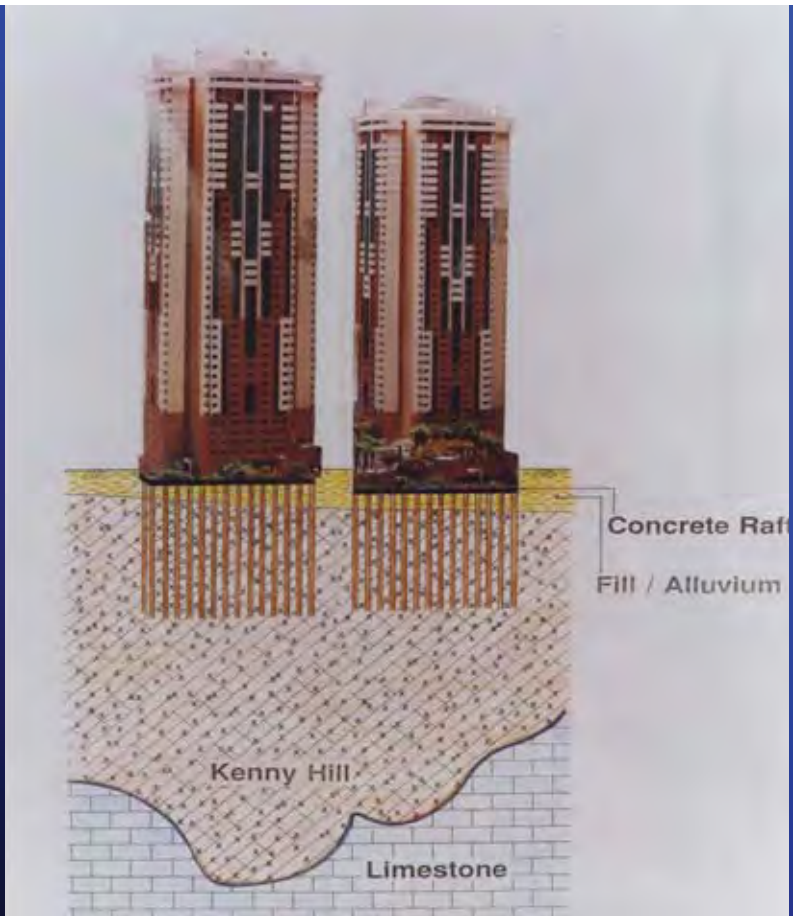
Low Rise Buildings (Link Houses)





2500 Ton Silo

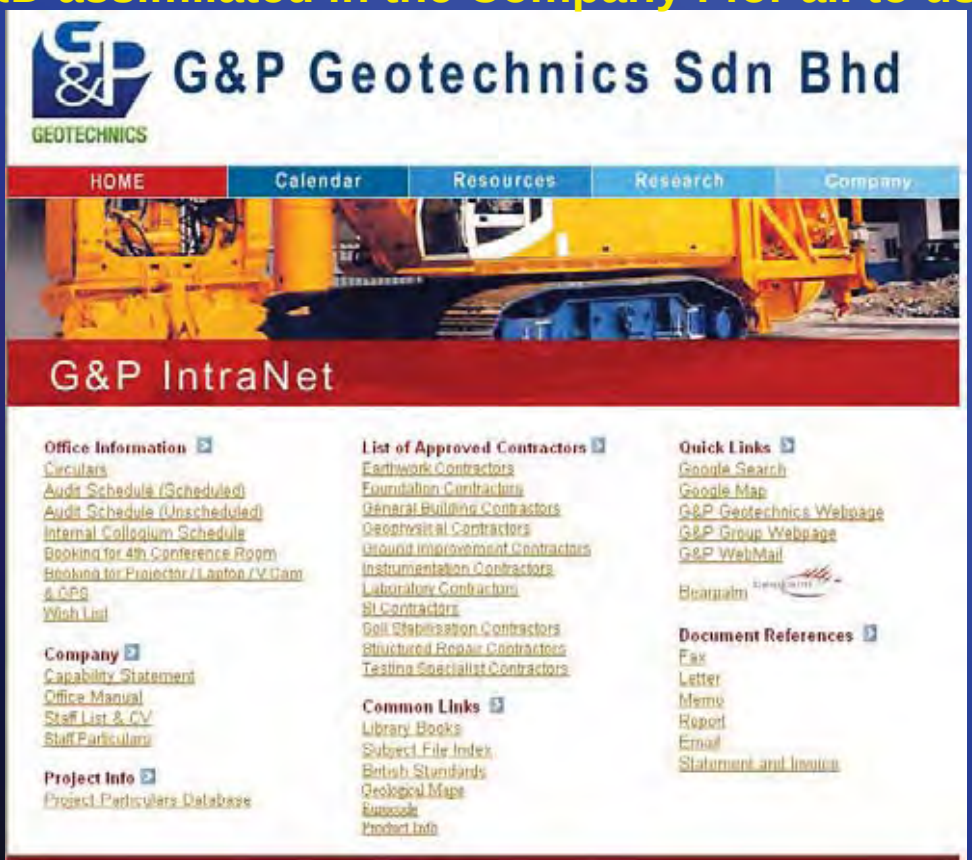
on Very Soft Marine Deposits


Concrete Raf
Fill / Alluvium
Kenny Hill
Limestone

R & D

- Guidelines / Checklists
- Interpretation of test results
- Database Management
- Contractual Document
- Software Guru System
- Operating Procedure
  - Planning
  - Analysis
  - Design

- R&D assimilated in the Company : for all to use



- ***Uploaded to Internet to Share with others :***

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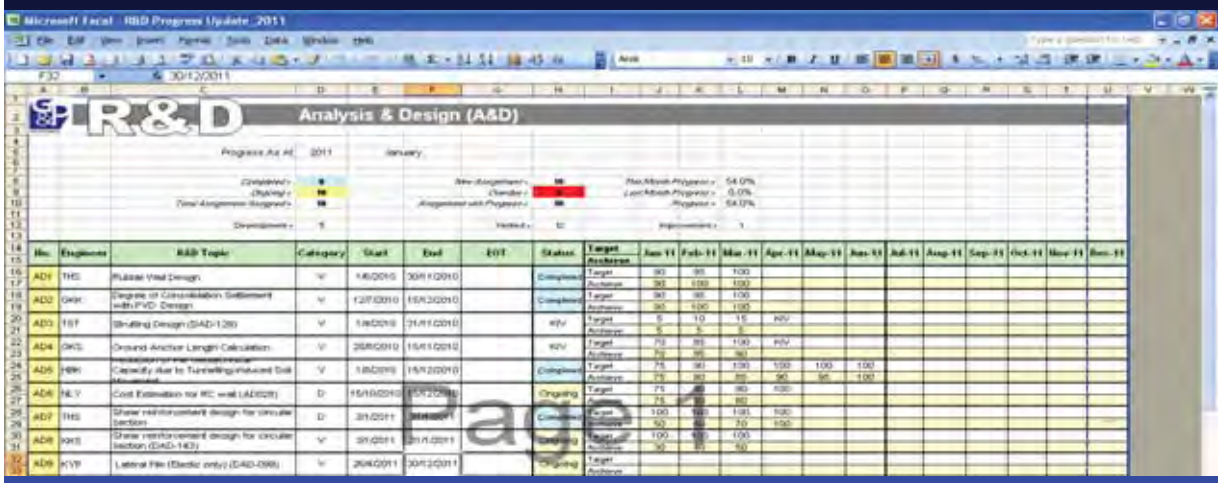
R&D PROGRESS MONITORING



Engineer/ Geologist

R&D Topic

Commencement Date

Target Completion Date

Monthly Progress (%)

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.

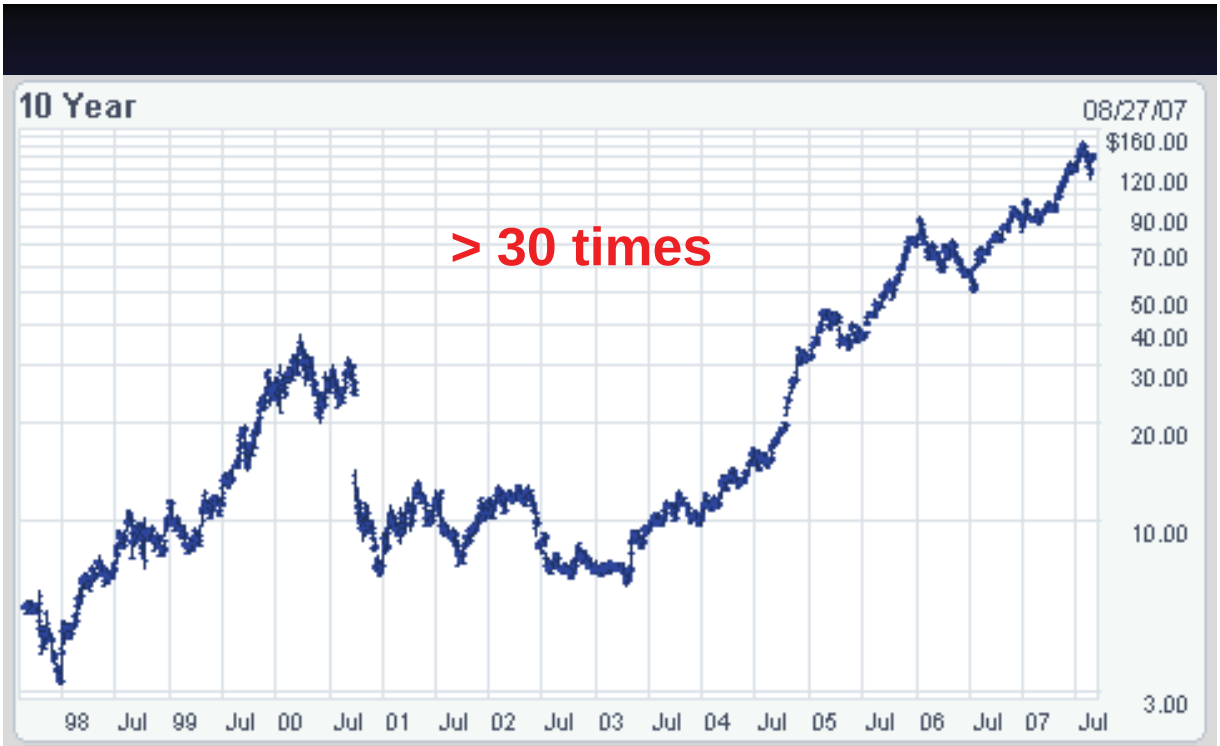
During the quarter, Apple shipped 1.12 million units of the iPhone, which went on sale in the United States in late June. That was towardS the high end of analysts' forecasts.

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

"They have real value in the iPhone. We were a little disappointed in the sales number itself. More and more people will find the phone more useful as they add outside applications," said Nicholas Kaiser, president of Saturna Capital, which owns Apple shares in mutual funds and private accounts.

One thing Apple did not disclose was its chunk of shared revenue from AT&T Inc, the exclusive US network carrier for the iPhone. Analysts have estimated the payments could amount to anywhere from US$150 to US$350 or more per unit over the mandatory two-year contract. – Reuters

Shoppers making their way past an Apple store in Schaumburg, Illinois. – Reuters



APPLE STOCK PERFORMANCE FOR LAST 10 YEARS

ISO 9001 :2000 Quality Management System.

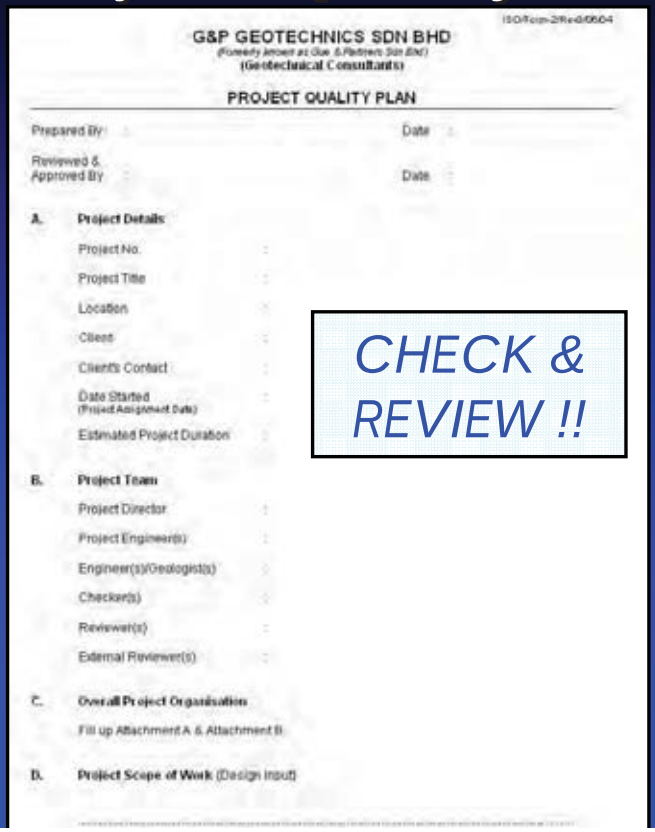
Quality Management Principles :

Principle 6 = Factual Approach to Decision Making

Effective decisions = Analysis of Data and Information

(Client Evaluation, Feedback, Complaints, Internal Quality Audits, Performance, etc.)

Project Quality Plan



G&P GEOTECHNICS SDN BHD

(Geotechnical Consultants)

PROJECT QUALITY PLAN

Prepared By : Date :

Reviewed & Approved By : Date :

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)

CHECK & REVIEW !!

Planning, Analysis & Design

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PLANNING / ANALYSIS / DESIGN

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&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 appli cable)

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 :
1. **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
2. **Work Ref.** = XXXXX / Status %% / R++ / ### / &&& / @@@
   Where XXXXX = Project No., **Status** = Check (C) or, Review (R) 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 (Initial)
3. From Revision No. 1 (R1) onwards, the %% number shall be the same as Revision No. 0 (R0)

Project Summary Form

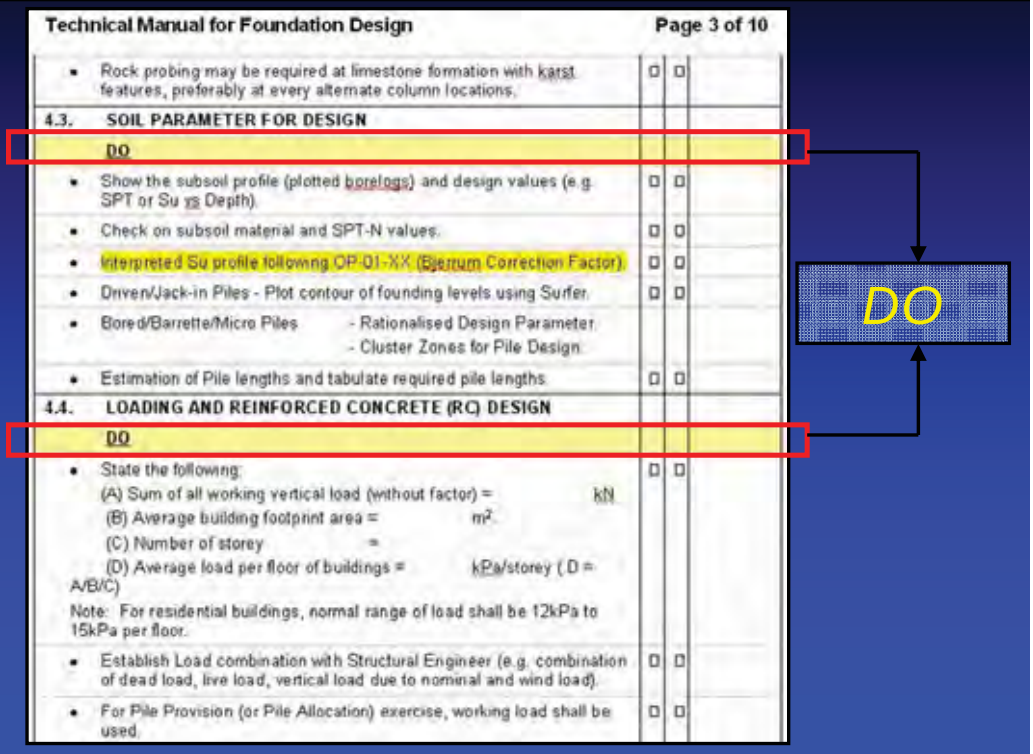
G&P GEOTECHNICS SDN BHD
(Formerly known as Gue & Partners Sdn Bhd)
(Geotechnical Consultants)

PROJECT SUMMARY FORM

Project No :	Updated on : (d/m/y)	Client :
Project Title : (simplified)		
Developers :	Consultants / Specialists :	Contractors :
Location : (Road / City / District / State / Country)		
G&P Scope :		
Main Issues :	1.	
Geology Information : (e.g. Formation, Type of Bedrock, other Geological data)	1.	
Subsoil Condition:	1.	
Geotechnical Works Information :	1.	
Lessons Learned or Errors Made : (e.g. New lessons, mistakes made, improvements to G&P, etc.) *Please record the lessons learned or error made in detail in TM Form (ISO/Form/27 Rev.09/08)	1. 2. 3. 4. 5. 6. 7. 8.	
Has lesson learned already captured in CP/TM? (please tick ✓)	( ) Yes, ( ) Not Yet, ( ) No Lesson → If "Not Yet" please submit to R&D Project Management committee c.c. to TYC	

LESSON LEARNED

Technical Manual (DO & DON'T)



Technical Manual for Foundation Design — Page 3 of 10

- Rock probing may be required at limestone formation with karst features, preferably at every alternate column locations.

4.3. SOIL PARAMETER FOR DESIGN

DO

- Show the subsoil profile (plotted borelogs) and design values (e.g. SPT or Su vs Depth).
- Check on subsoil material and SPT-N values.
- Interpreted Su profile following OP-01-XX (Bjerrum Correction Factor).
- Driven/Jack-in Piles - Plot contour of founding levels using Surfer.
- Bored/Barrette/Micro Piles - Rationalised Design Parameter. - Cluster Zones for Pile Design.
- Estimation of Pile lengths and tabulate required pile lengths.

4.4. LOADING AND REINFORCED CONCRETE (RC) DESIGN

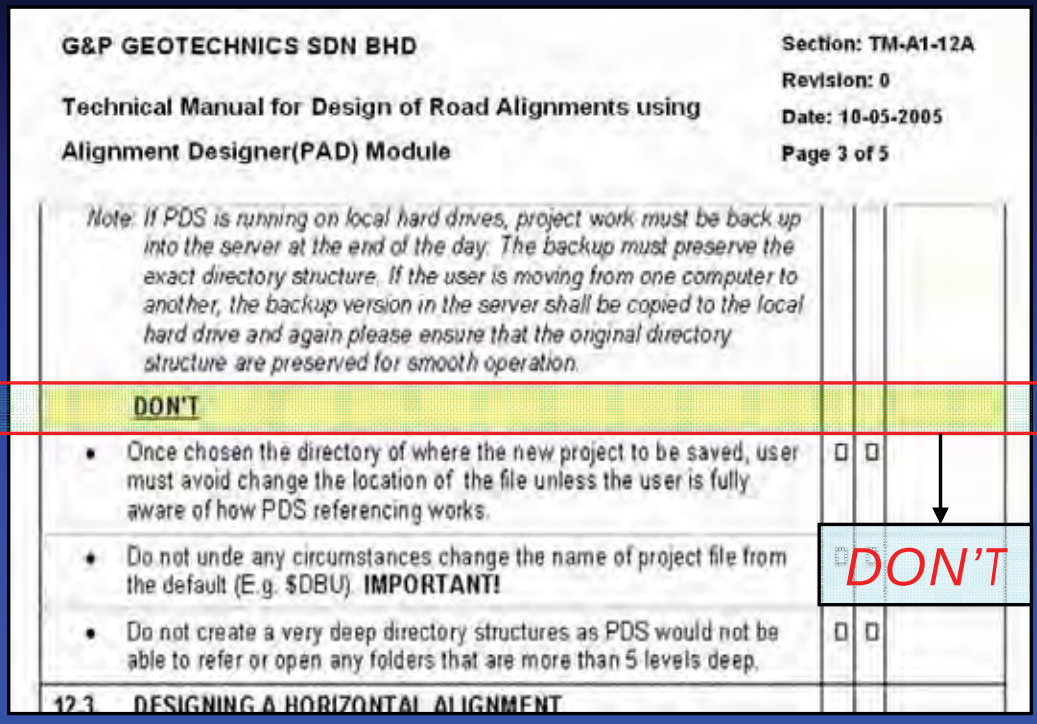
DO

- State the following:
  (A) Sum of all working vertical load (without factor) = kN
  (B) Average building footprint area = m^2
  (C) Number of storey =
  (D) Average load per floor of buildings = kPa/storey (D = A/B/C)

  Note: For residential buildings, normal range of load shall be 12kPa to 15kPa per floor.
- Establish Load combination with Structural Engineer (e.g. combination of dead load, live load, vertical load due to nominal and wind load).
- For Pile Provision (or Pile Allocation) exercise, working load shall be used.

DO

Technical Manual (DO & DON'T)



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

Section: TM-A1-12A
Revision: 0
Date: 10-05-2005
Page 3 of 5

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.

DON'T

- 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.
- Do not unde any circumstances change the name of project file from the default (E.g. $DBU). **IMPORTANT!**
- 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.

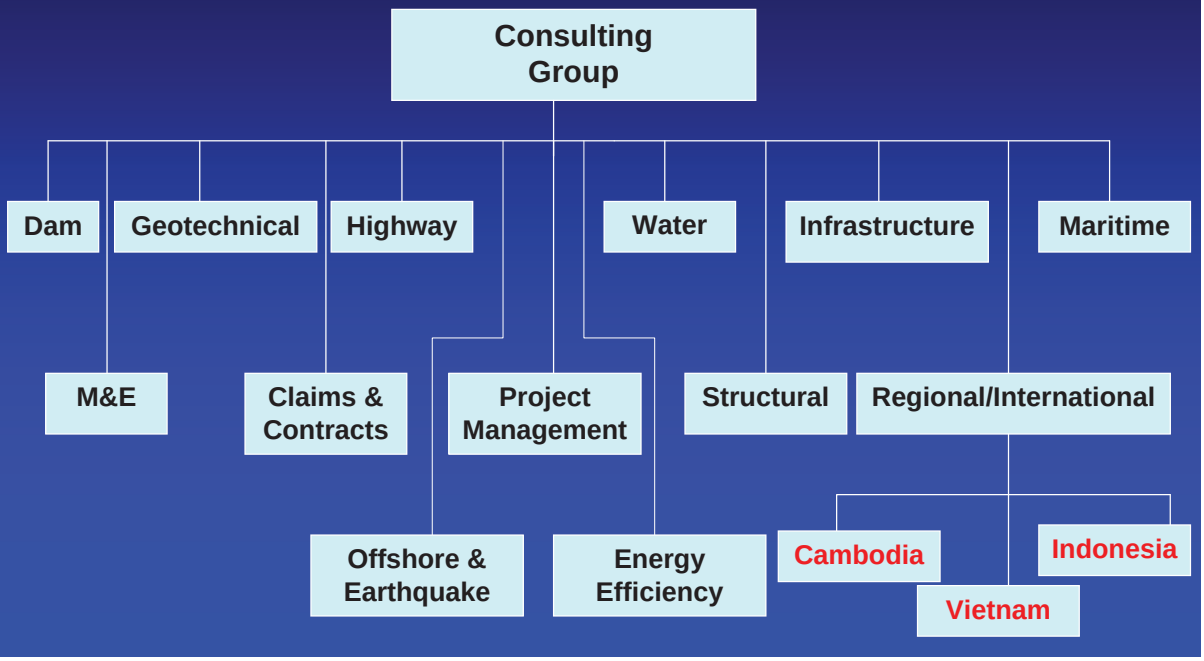
12.3 DESIGNING A HORIZONTAL ALIGNMENT

DON'T

TRUST

- More and more transparency
- Written (Shareholder Agreement)
- Commercial decision
- Discipline

Formation of "One-Stop" Specialist Consulting Firm



ROUTE TO FORMATION OF A ONE-STOP MULTI-DISCIPLINARY PRACTICE

Formation of Specialist Consulting Firms	Formation of Multi-Engineering Practice	Formation of Multi-Disciplinary Practice	Formation of Partnership
Dam Consultants Geotechnical Consultants Highway Consultants Hydrology Consultants Infrastructure Consultants Marine Consultants M&E Architects Surveyors Structural Others	Multi - Engineering Practice	Multi - Disciplinary Practice	Developers Consultants Contractors Operators

COMPETITIVENESS

Ingredients

a) Capability
b) Capacity
c) Efficiency

} **House of specialist firms**

- **use of technology / ICT**

d) Innovativeness

- **Track records**
- **Competition**

CONCLUSIONS

- Partnership or Sdn Bhd
  - Written agreement ($$)
- Mission QS Va
- Plan – long term
- Training modules
  - Completion
  - Performance
  - Competency
- System

CONCLUSIONS (cont.)

- Attributes of a sustainable firm
- For Clients:
  - **Structured Quality System with Value-adding (QSVa)**

CONCLUSIONS (cont.)

- Formula of Successful Consultancy / Service Firm
  - Structured **Equity System** (2-tiers)
  - Attract & Assemble **Talents**
  - Good Structured **Knowledge Management & Training**
  - Capability & Capacity

WITH TEAMWORK WE SHALL EXCEL TO HIGHER HORIZON

FERRARI 'S PITSTOP WAS COMPLETED BY 15 MECHANICS (FUEL AND TYRES) IN 6.0 SECONDS FLAT.

54 PEOPLE TOOK PART IN THIS CONCERTED ACROBATIC JUMP.

Championship team cannot rely on one or few players.

Thank You for Your Attention

The End

Thank You

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30 March 2010