

BIM

OLEH : HANAPI HAMDAN

Pengerusi Projek Perintis BIM-JKR 2011

BUILDING INFORMATION MODELING

- To top Management it means Building Information Management
- To the professional it means being a modeler
- To consultants : what the heck .. What's needed is just a Presentation, a Tender Drawings & related documents
- To the client : that's cool, now I can see what I want and change my mind at will
- To an ordinary people .. Wow
- To the Contractor : is it ?



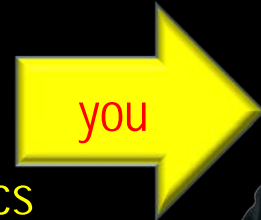
WHAT IT MEANS TO BOTH

- 'Project Delivery' dengan Kos optimum, Berkualiti & Jangka Masa yang lebih Pantas dengan mengambilkira :-
 - Value Management
 - IBS
 - Green Element
 - dsb
- Pengurusan Asset secara komprehensif dari peringkat awal Perancangan, Perolehan, Pembinaan & Pengurusan Fasiliti selama jangka hayat bangunan

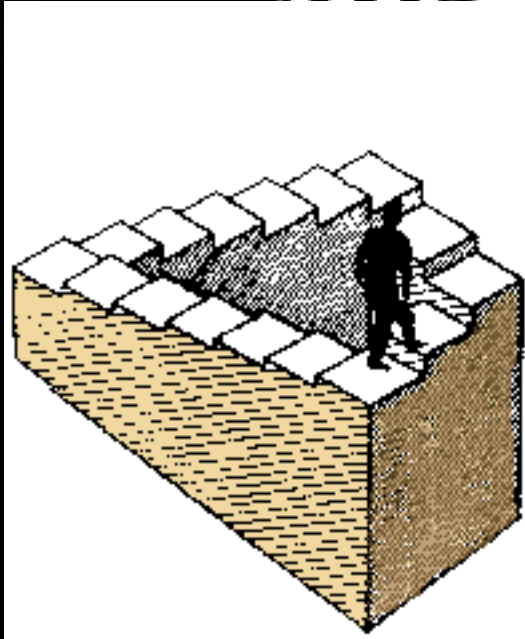


TUJUAN

- Visualization • Clarity • Simplicity
- Scope Clarification • Design Validation •
- Options Analysis • Value Management • Green Element •
- Partial Trade Coordination • Standardisation Of Components
- Collision Detection/Avoidance •
- Construction Sequencing Planning/Phasing Plans/Logistics
- Marketing Presentations •
- Walk-through and Fly-through •
- Virtual Mock-Ups •
- Sight Line Studies



This is not a 3d
it's a perspective



As confusing as this



BIM : TERMINOLOGY

- .. is the process of **generating building data during its life cycle**. Typically it uses three dimensional, real-time, dynamic building modeling software to increase productivity in building design & construction.

- Charles M Eastman

Which is

you



.... **generating building data during its life cycle**



DIRINGKASKAN

- 3D + dimensi ke-4, ke-5, ke-6, ke-7

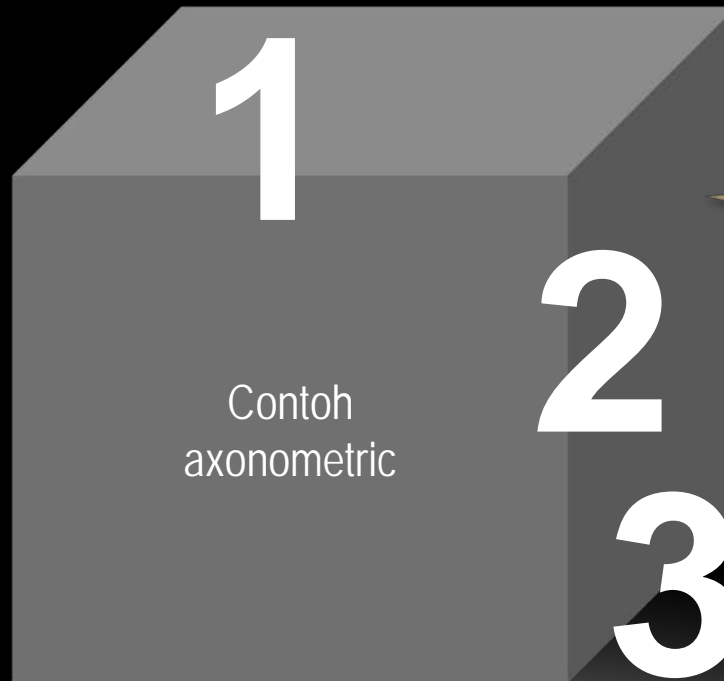
DIMENSI KE-7

DIMENSI KE-6

DIMENSI KE-5

- Value Management
- Green Element
- Energy Use

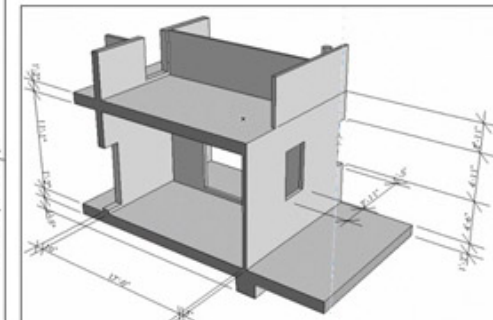
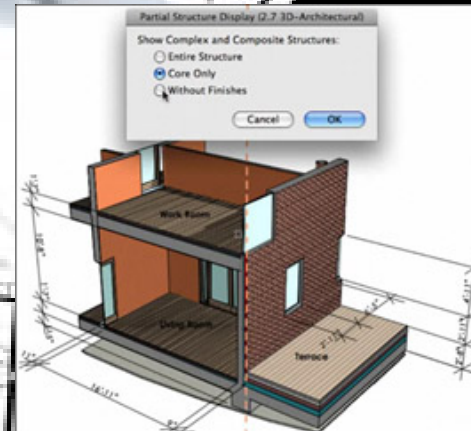
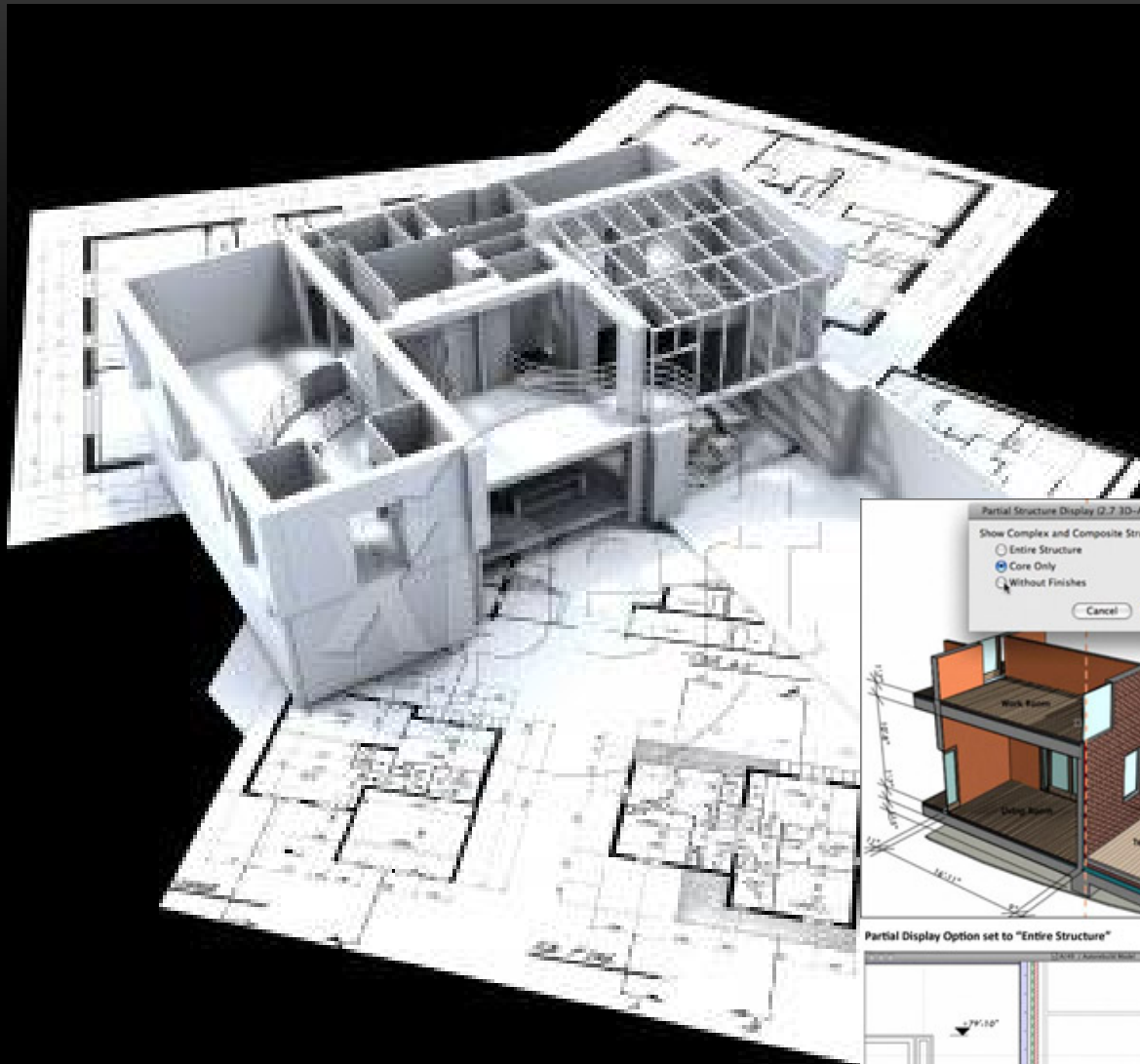
DIMENSI KE-4
Atau
MAKLUMAT
TERPERINCI



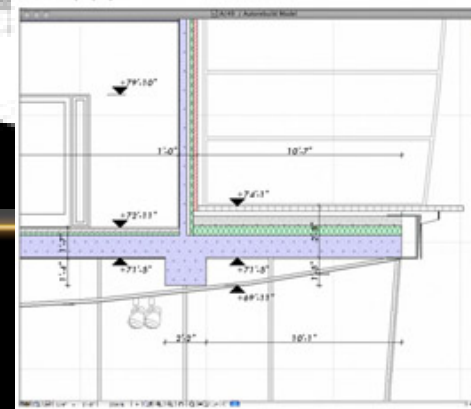
Semua urusan berskil
(managed in scale, proportionately)

Dimensi ke-3 yang boleh dilihat
dalam semua urusan

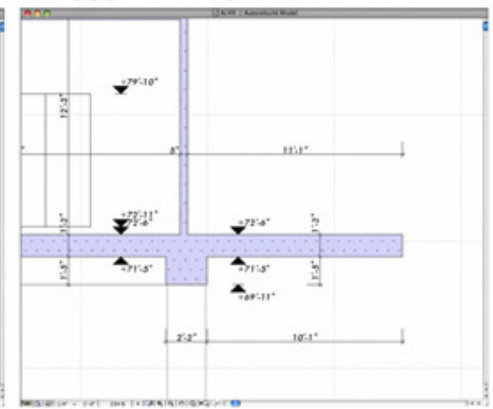
AND THIS

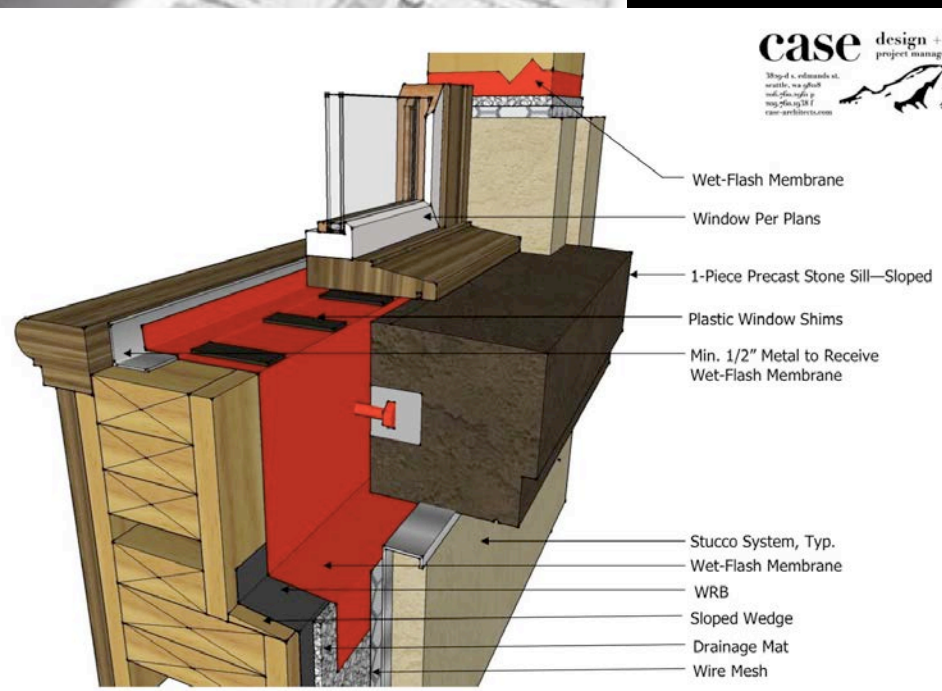


Partial Display Option set to "Entire Structure"



Partial Display Option set to "Core Only"



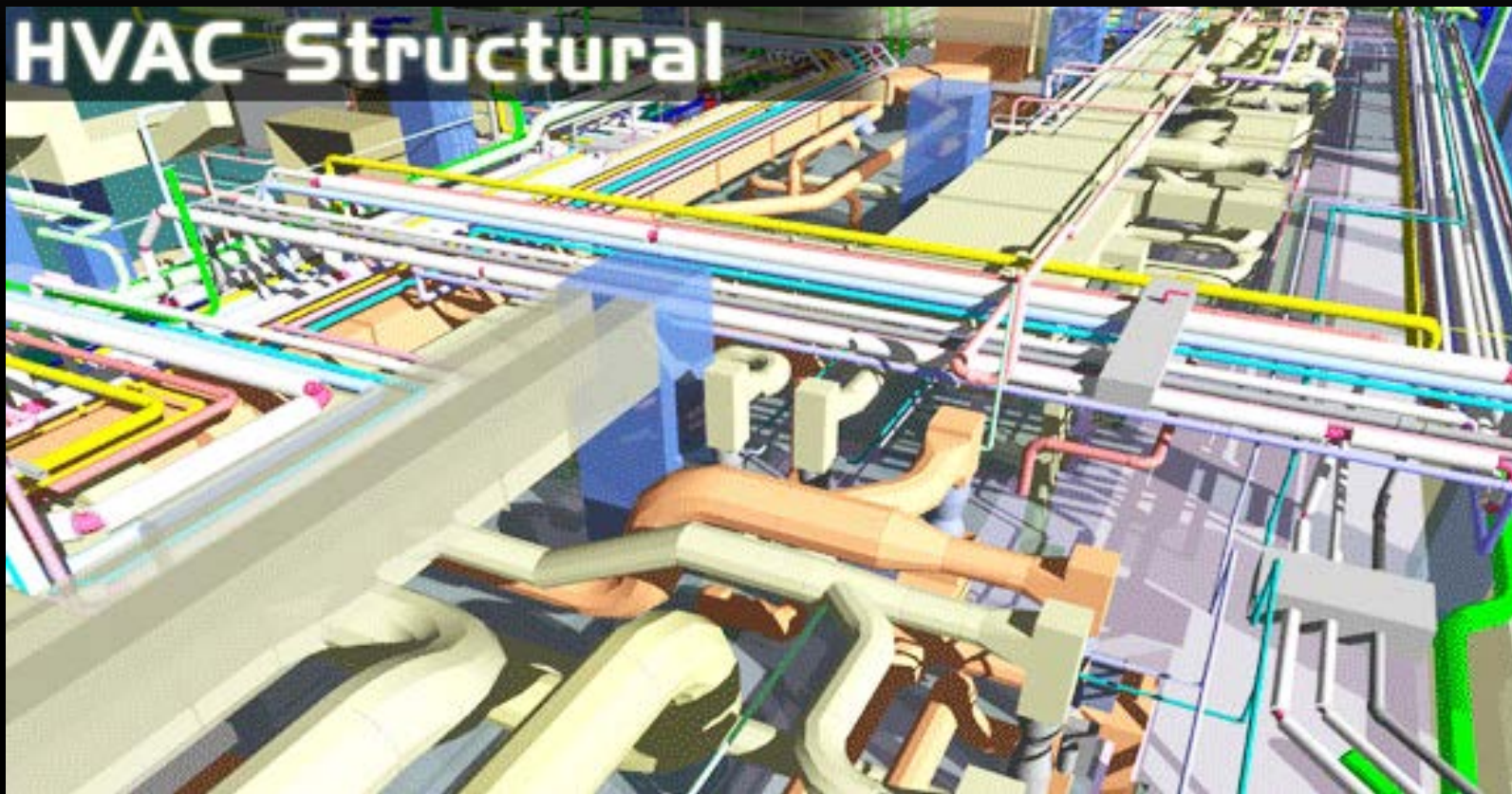


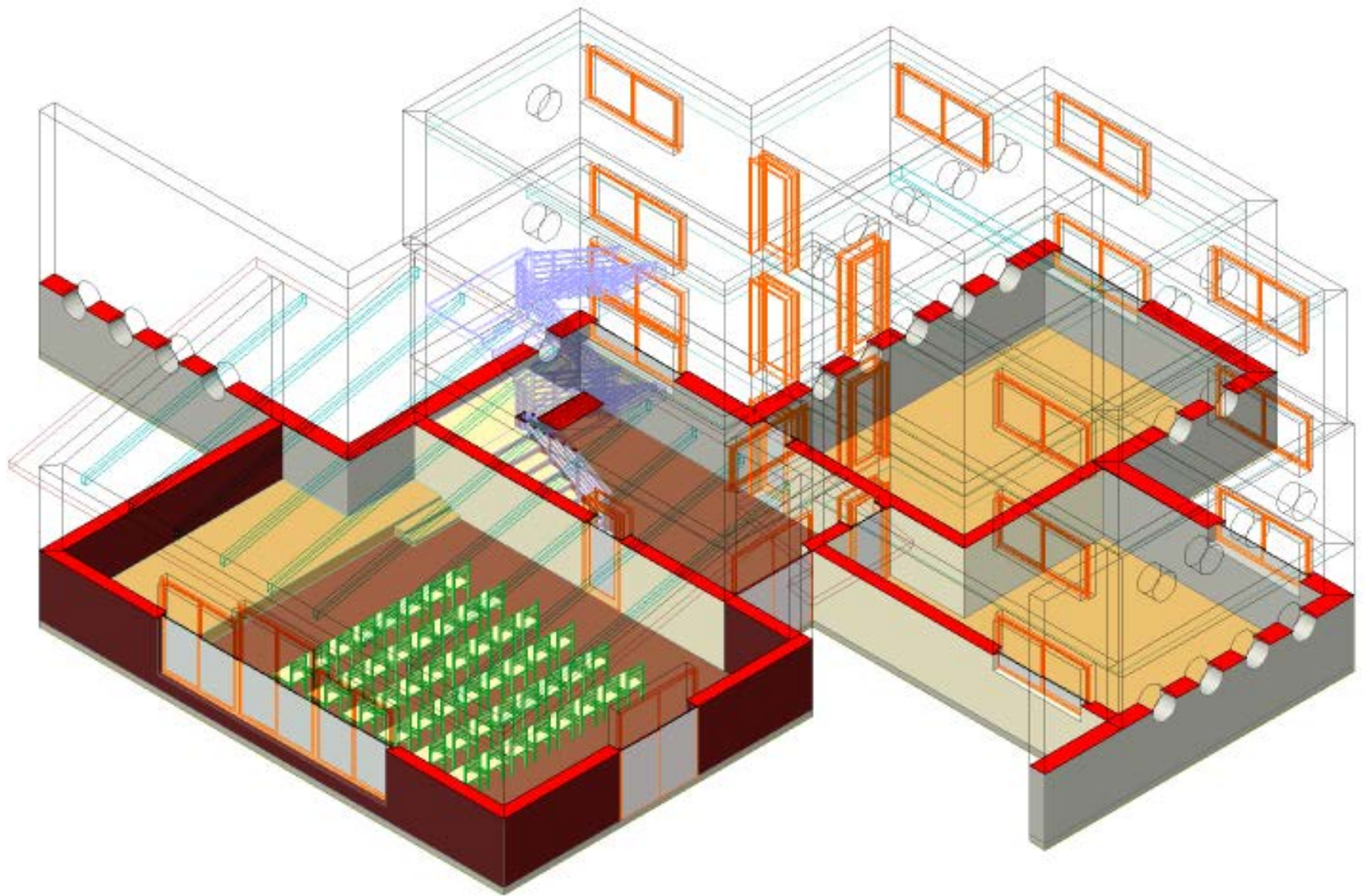
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3000 S. Edmunds St.
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tel: 206.461.1111
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HVAC Structural





TO GET A FINAL PRODUCT LIKE THIS





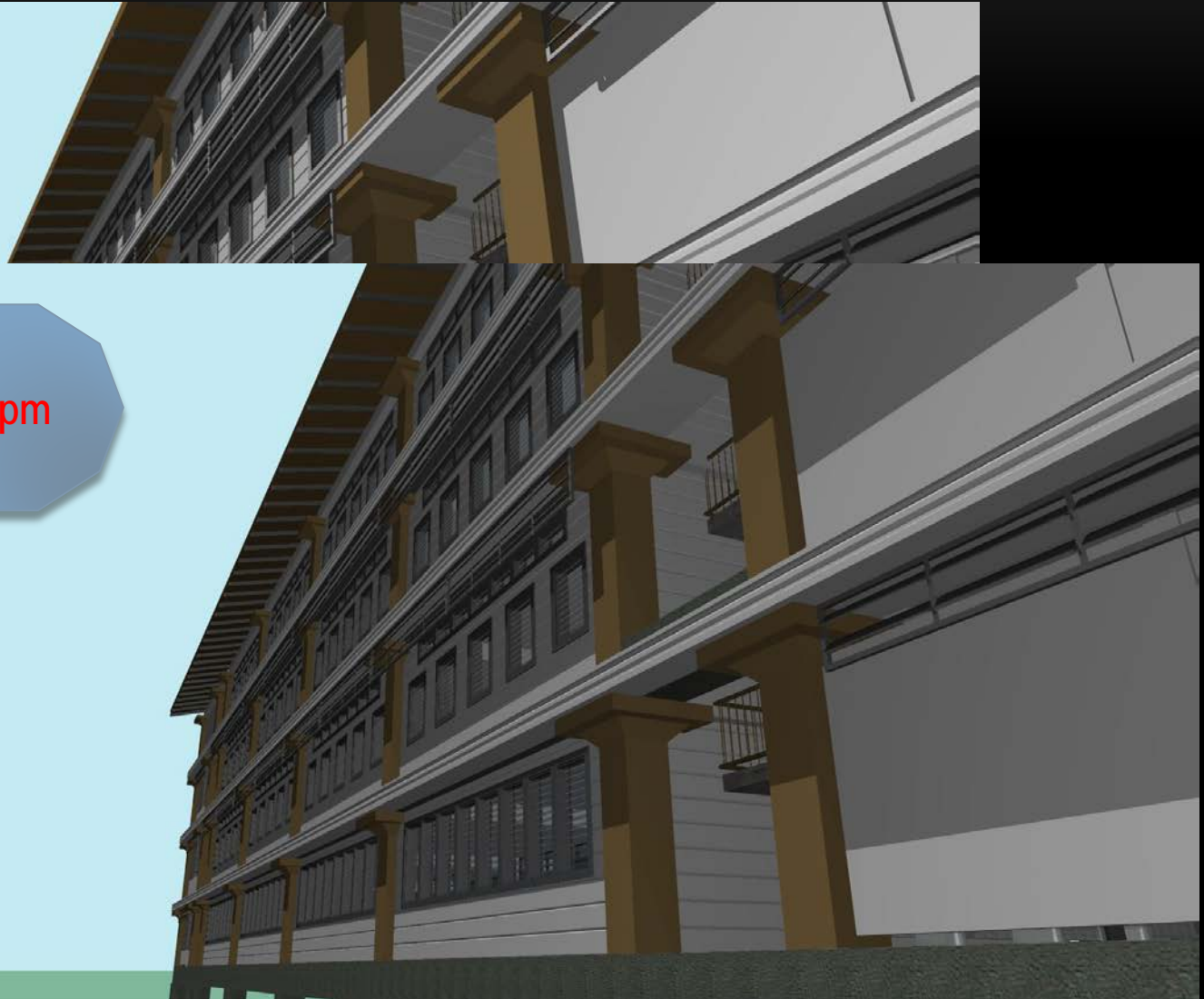
CONTOH REKABENTUK BARU SEKOLAH



KAJIAN CAHAYA MATAHARI

8 am

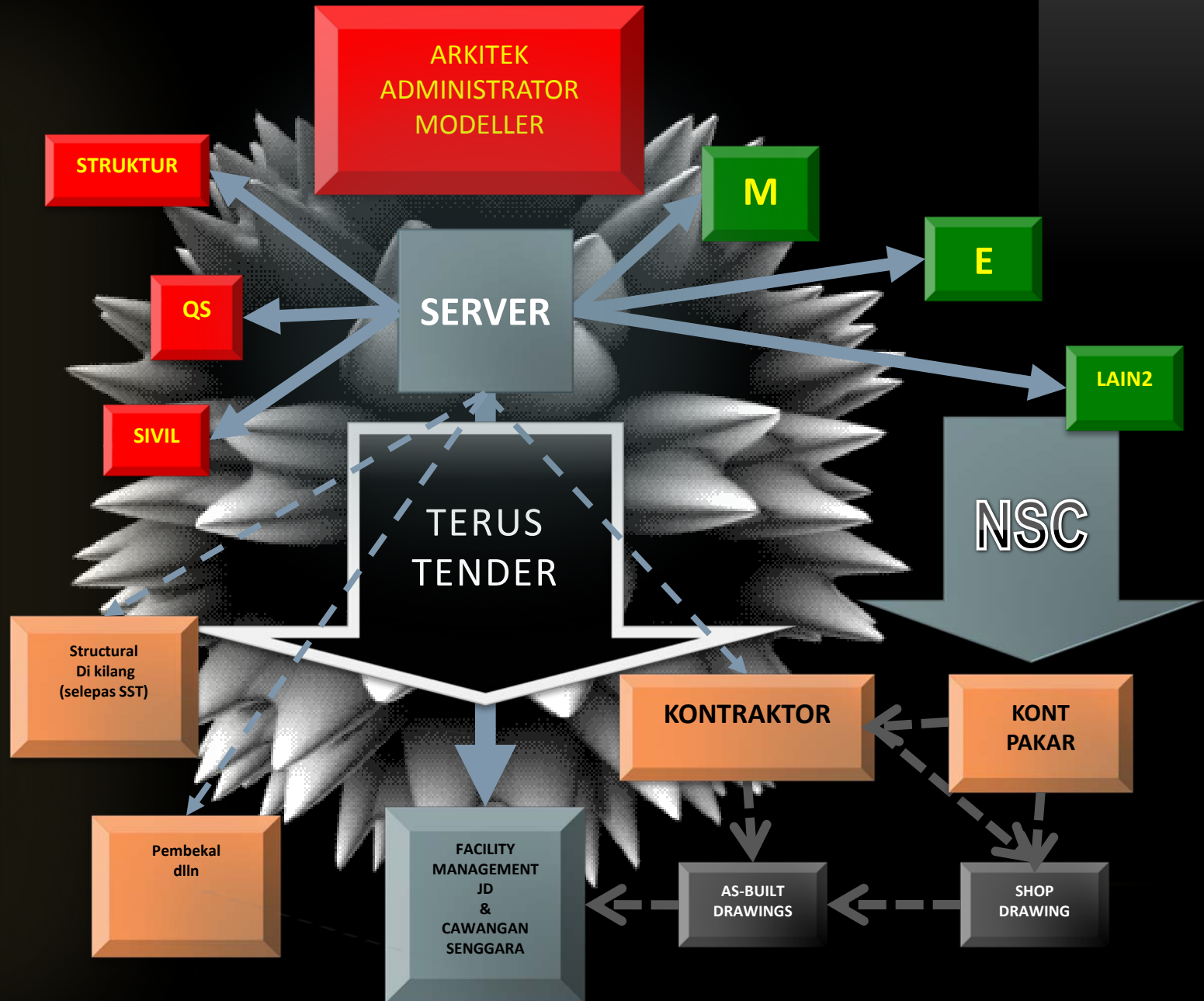
12 pm



RANTAIAN KOLABORASI SECARA 'REAL-TIME'

MICROSOFT PROJECT/
PRIMA VERA
DALAM INI

PENGURUSAN ATASAN
PEMANTAUAN : SKALA
PENGURUSAN PROJEK : BIM



IT'S A NEW TERRITORY

- Suatu program Projek Perintis telah diwujudkan untuk menerokai bidang baru ini untuk dijadikan 'peta-jalan' (road-map) mengikut kesesuaian JKR
- Oleh itu beberapa perkara baru telah dilihat sebagai kemungkinan boleh digunakan, di atas sebab penggunaan & kewujudan BIM itu sendiri



PROJEK PERINTIS

MERINTIS ROAD-MAP

1. Fast Pilot-Project Implementation

- Shouldn't delay existing schedule
- Pace-setter
- Framework & Model for JKR's BIM

2. BIM at whatever level affordable

- DMT
- As-Built-Drawings
- Shop Drawings

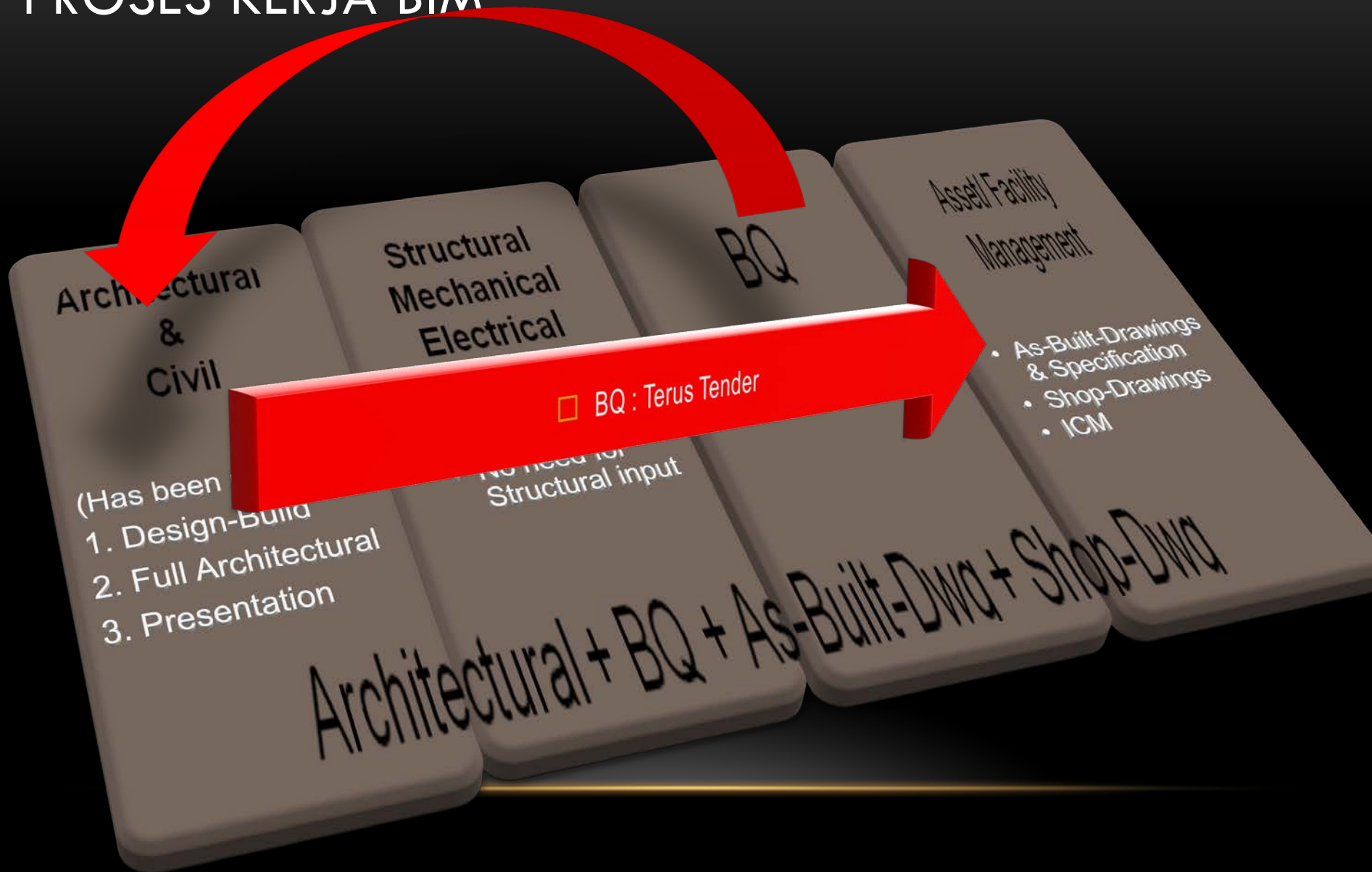
3. Reusable

- Facility Management, PPM etc
- Std Design & DMT
- PAP

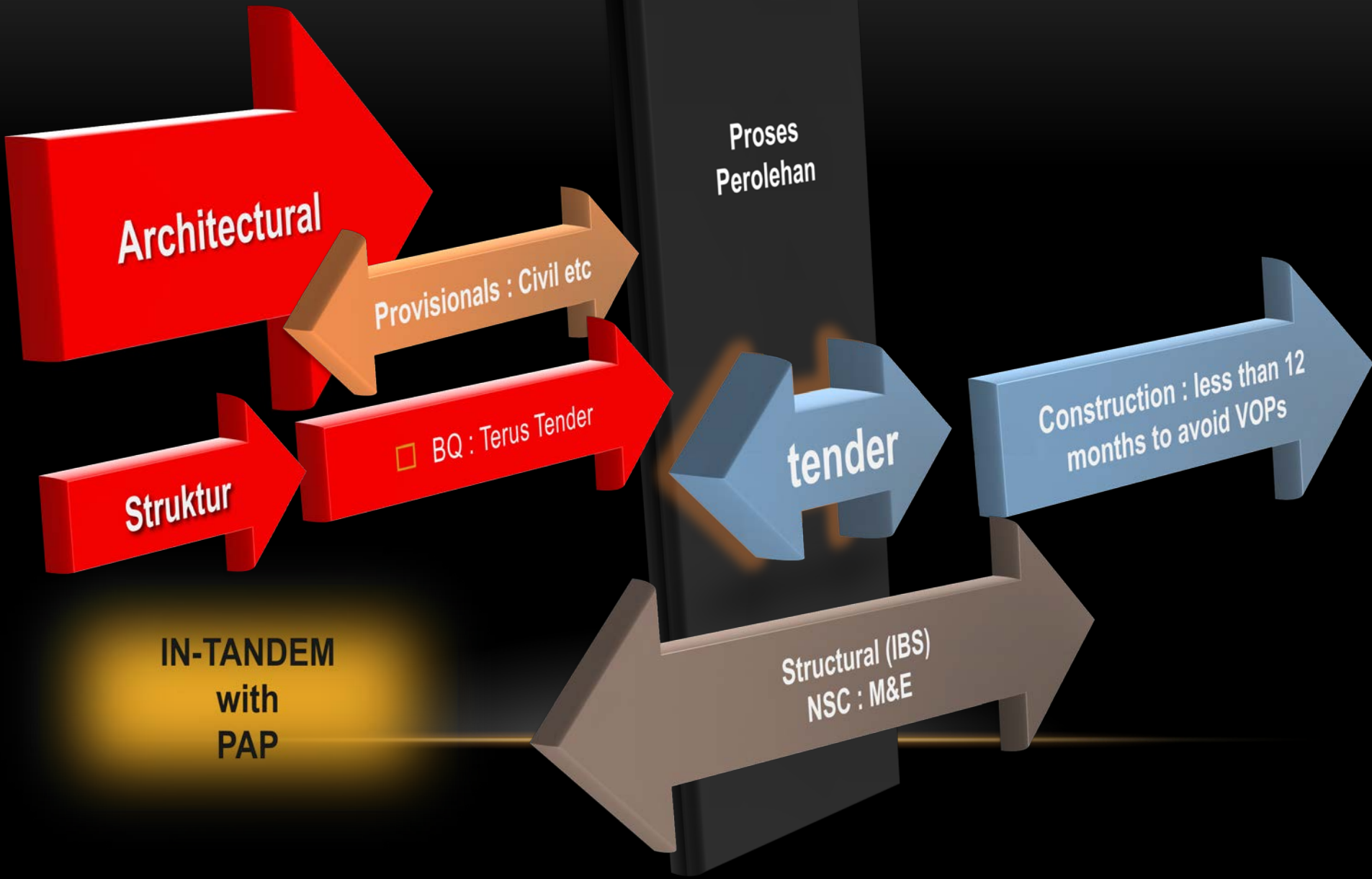
berterusan



PROSES KERJA BIM

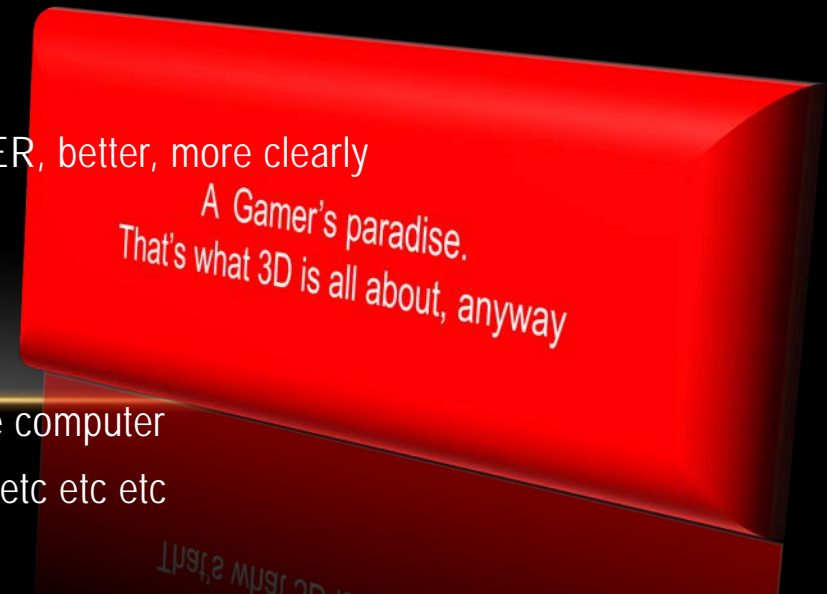


SECARA GRAFIK



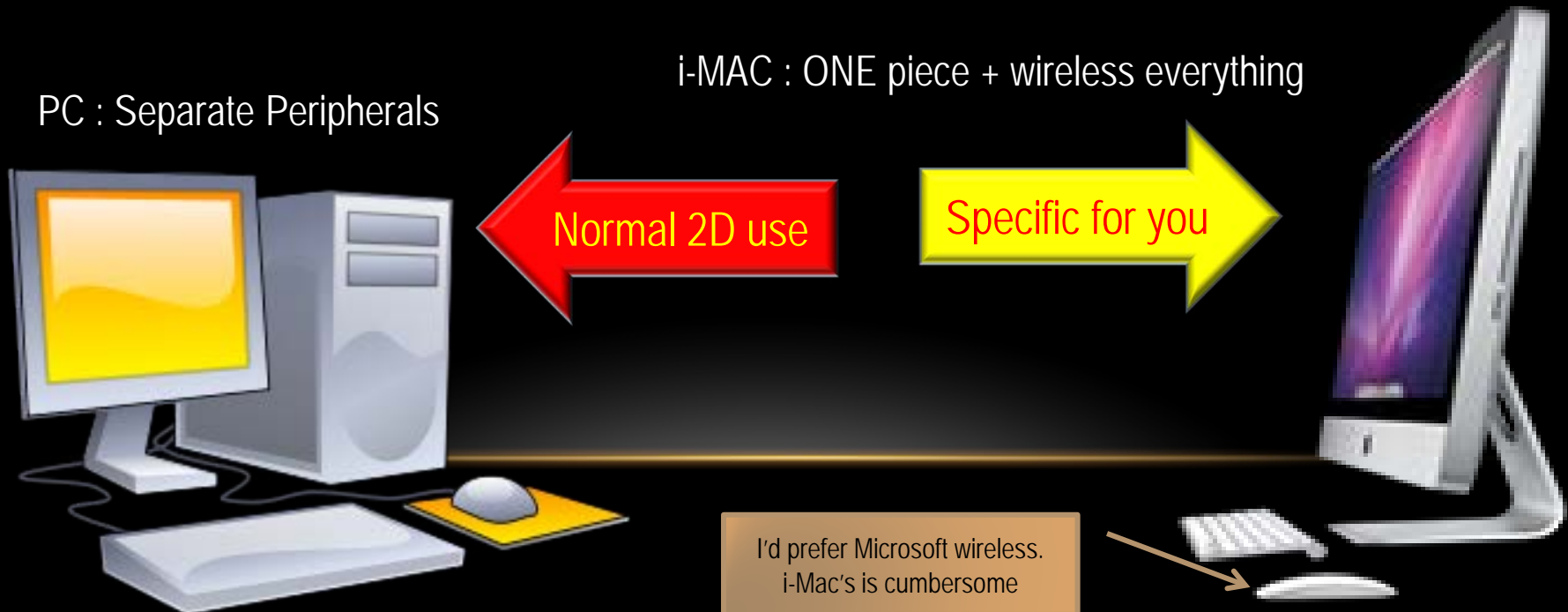
HARDWARE : WHAT A MODELER NEEDS

- Good SPEEDY Motherboard running on 64 Bit technology
- Industrial Intel-Core-Duo Multi-Processor specific for BIM
 - Industry first for BIM solution
- 64 Bit system
 - 16 Terabyte RAM
 - 1 terabyte System Cache (for teamwork & collaboration on real-time)
 - Utilise practically any amount of RAM
 - Able to work on large BIM complex
 - 1 file : no need breaking down into files
 - x-ref or modules (grouping in one layer will do)
- LED Backlit Big Rectangular Screen
- Good SPEEDY Graphic Card
 - A mechanical device to see graphic FASTER, better, more clearly
 - Badly needed for moving graphic like BIM
 - Responsive to real-time
 - Rendering quickly, high quality
 - Graphic Card Memory take the load-off the computer
 - Colour, texture, hue, definition, movement etc etc etc



I-MAC FITS THE BILL

- It seems i-Mac fits the billing outside mainframe
- For the right price (cheapest in it's specification)
- To do modeler's job for another 10 years technology
- Mac has the 27" anyway .. The only available on 1 piece
- Unless we want to go on HDMI LED mothered by unfamiliar & untested peripherals to become a PC.
- Available PCs are for general public use .. Not for professional in modeling.



Faster than firewire
technology

Tunderbolt technology :
Unique to i-Mac

3D VIEW



PLAN



PUBLISHING



ONE GIANT SCREEN

3 MODELER CAN WORK ON ONE PROJECT FILE AT THE SAME TIME
OR ONE MODELER BREAKING THE DRAWINGS INTO 3 COMPUTERS WORKING ON REAL-TIME

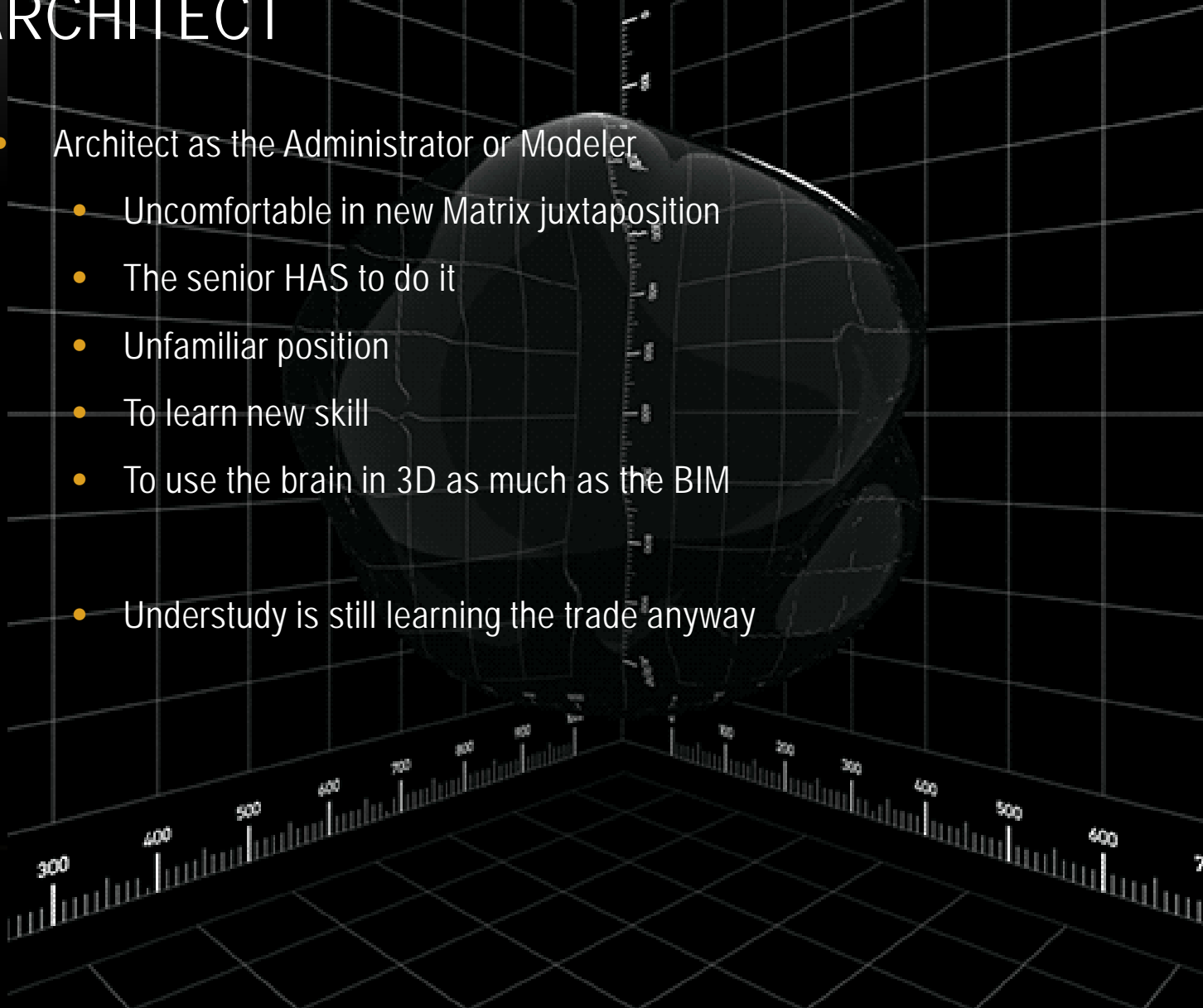


SOFTWARE

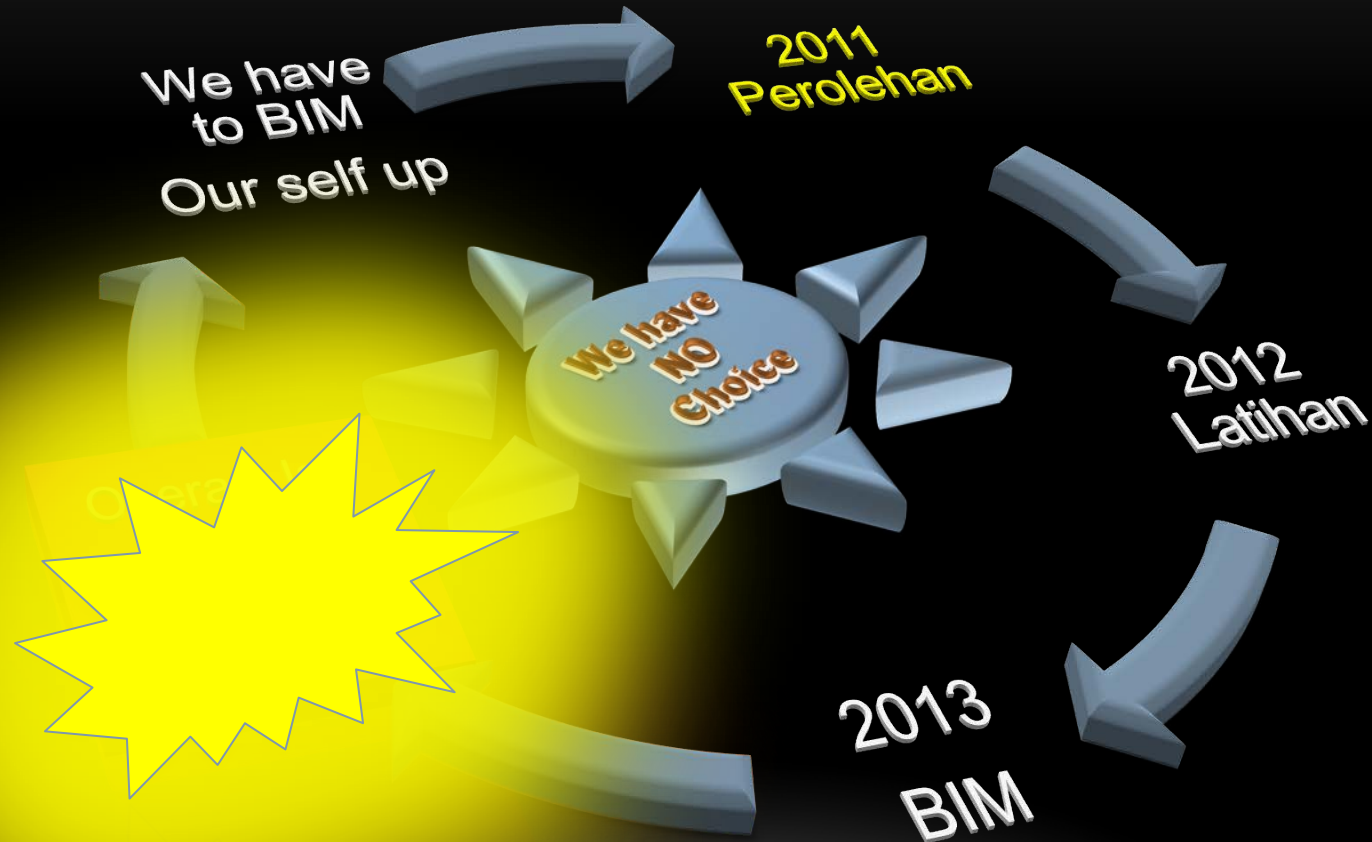
- Autodesk Revit :
 - Best for a single entity organisation like JKR
 - Responsible from Planning, Design, Procurement, Construction, Manufacture's relationship, DLP, Maintenance, Facility Management, PAP Asset Management
- Archicad :
 - Preferred by most Architect for stand alone
 - Best for IBS & Industrialised Building Components
 - Does not cover as much Facility & Asset Management
 - Can IFC (converted) out to Revit : good for monolithic structures
- Bentley : working for main-frames at the moment
- 3rd party Software's
 - Presentation over weaker computers : VR, Walkthrough etc.
 - Value Management
 - Energy Use & Savings (Law in most European country)
 - Etc. etc.

ARCHITECT

- Architect as the Administrator or Modeler
 - Uncomfortable in new Matrix juxtaposition
 - The senior HAS to do it
 - Unfamiliar position
 - To learn new skill
 - To use the brain in 3D as much as the BIM
- Understudy is still learning the trade anyway



OR LOOK AT IT THIS WAY



QUANTITY SURVEYOR

- Unfamiliar with BIM BQ form in elements, component & schedules.
- **Too simple** (familiar to industrialised nation) made the QS jittery. Everybody jittery
- Not sure QS trusted the Data & Information automatically generated by 64 bit to be tabulated back into familiar description-unit-rate, if they wish to
- And or QS will revert back to manual quantifying

THANK YOU