

## SCOPE OF WORK

14 July 2022

Please find hereby information provided which will give a clear understanding of what we will include in our costing and items which will require your own dedication.

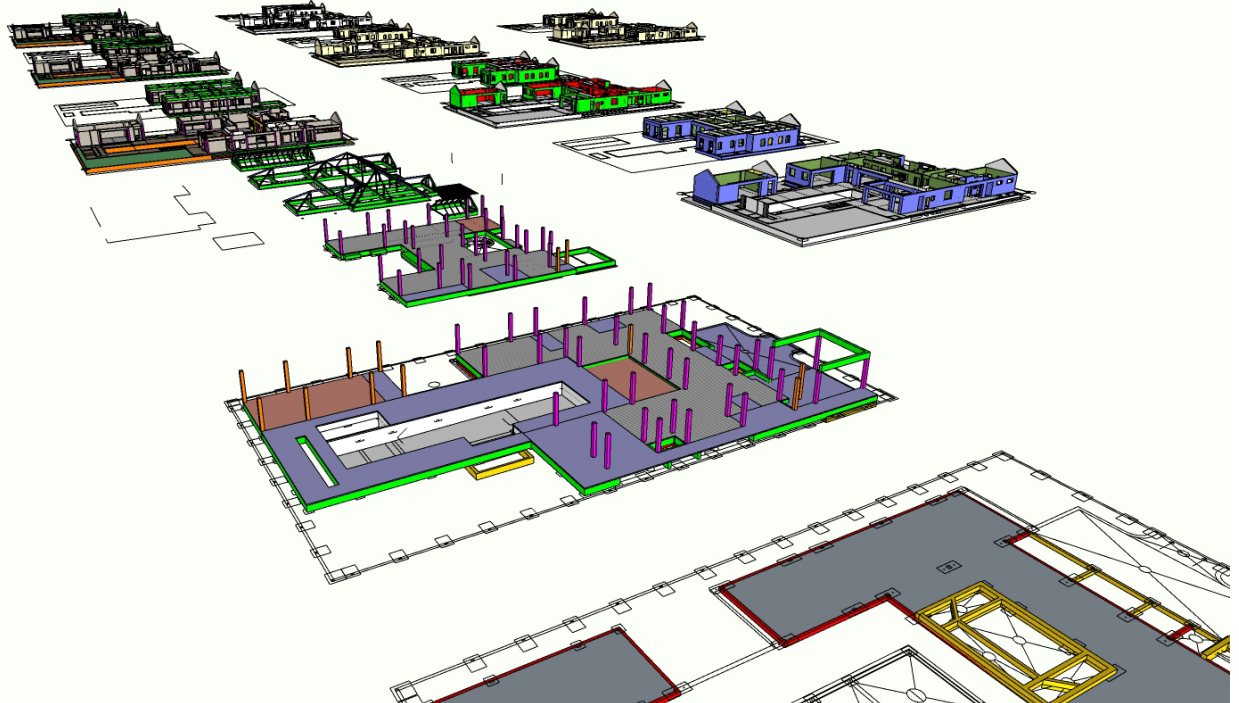
### ARCHITECTURE & ENGINEERING

The Architecture and Engineering work is complete as per our original proposal. All documents and calculations have been submitted to the relevant authorities for approval. Any requests for additional information and or changes in design detail will be accommodated by the Company to ensure the final build permits are approved.

Additionally, in the capacity of being the Construction Company and the Project Management Company, we shall furthermore assist with architectural drawings where required during the construction phase.

We understand additional details and material selections are still pending your final confirmations, for which, once those items are finalized, we will update all relevant documentation to support the construction thereof.

Currently, as part of the Project Planning and Management, we are designing the house's structure in 3D which will furthermore assist and rectify any unforeseen issues which may arise as construction progresses. This work is not relevant to the Architectural and Engineering phase; however, we see this as a crucial part to ensure the entire project progresses seamlessly.



## SOIL SAMPLING

Two Soil Samples has been taken and the results thereof has been included in the final engineering report. The entire house structure has been optimized based on these results, whereby the key result is that the bedrock lays at a depth of 21m.

## GROUNDWORK & PREPARATION

Once all documentation is approved and planning permission has been granted, we can start the construction work.

In the first 2 weeks we will be preparing the site for work, which will include setup of the worker camp, store & mobile office, moving of required equipment and tools, layout, planning, and connection of temporary utilities.

For utilities such as electrical and water, it is the owner's responsible to furnish the site with such, however we can assist with the application thereof and we will cover the cost of all utilities used during the construction phase.

We will install a temporary internet connection on the site for use in the mobile office along with installation of a CCTV system with remote IP access which we will share with you for viewing.

As your property's elevation is already raised, the landfill as required by the construction method will be included in our BOQ, this however will not include landfill as required by a specific landscaping detail, which we do not envisage for your project.

## DEEPWATER WELL

We have made no provision for a Deepwater well in our costing. Being within the greater Bangkok Metropolitan, you will require a special permit to do such, however we don't believe this will be required as there should be a sufficient supply from the government.

## CONSTRUCTION

### 1. Structure Work

- 1.1. The structure of your house is defined as any internal or external load-bearing component of the building that is essential to the stability of the building or any part of it. Such includes, however not limited to, foundations (piles, footings) beams, columns, floors, walls & roof.
- 1.2. The structural work on your residence is expected to take approximately 5 months to complete. We do not rush this phase as to allow for the concrete to cure well during each phase. Our costing includes all material, labour, and equipment rentals.
- 1.3. All structural steel is as per TIS 24-2548 standards, and only SD40 grade will be used, no SD30 will be utilized in any work.
  - 1.3.1. *Note, currently the cost of structural steel in Thailand has increased approx. 45% compared with the same period last year. With our costing we can absorb a price increase of 5%, however as time progresses and there is a further significant increase, consideration must be given to accommodate such. (See figure below)*
  - 1.3.2. We have not seen the same significant increase with regards to other industry standard materials.
- 1.4. For all structural concrete work, we will use CPAC 240ksc, 325kg/m<sup>3</sup> Ready Mix Concrete.
- 1.5. During the structure work, we will also install the initial drainage systems such as for Shower Drains, Toilets, Sinks, Floors and more. Although not critical, it's important to ensure that the location of the sanitary ware does not change significantly as this will cause reworking of such.
- 1.6. For the house and pool main structural work, we have divided the payments into three parts, bellow are examples of what to expect.

a. Phase 1: Piling, footings, sub-ground beams & columns & ground beams.



Site preparation, layout and planning



Rebar work for footings



Footing formwork



Piles and Footing "F3"



Sub-ground columns



Sub-ground beams

b. Phase 2: Ground/1<sup>st</sup> floor structure, ground beams and columns, pool beams, floor, and formwork.



Pool floor and formwork



Pool walls & overflow tanks (under ground)



Sub-ground floor slab



Ground floor beams (raised above ground)



Ground floor slab with drainage preparation



Swimming pool shuttering

c. Phase 3: 2<sup>nd</sup> floor structure beams, floors & columns along with the plumbing 1<sup>st</sup> fix and pool structure work.



2<sup>nd</sup> Floor Shuttering



Rebar work for beams and floor slabs



2<sup>nd</sup> floor structure beams & floors



Concrete pouring



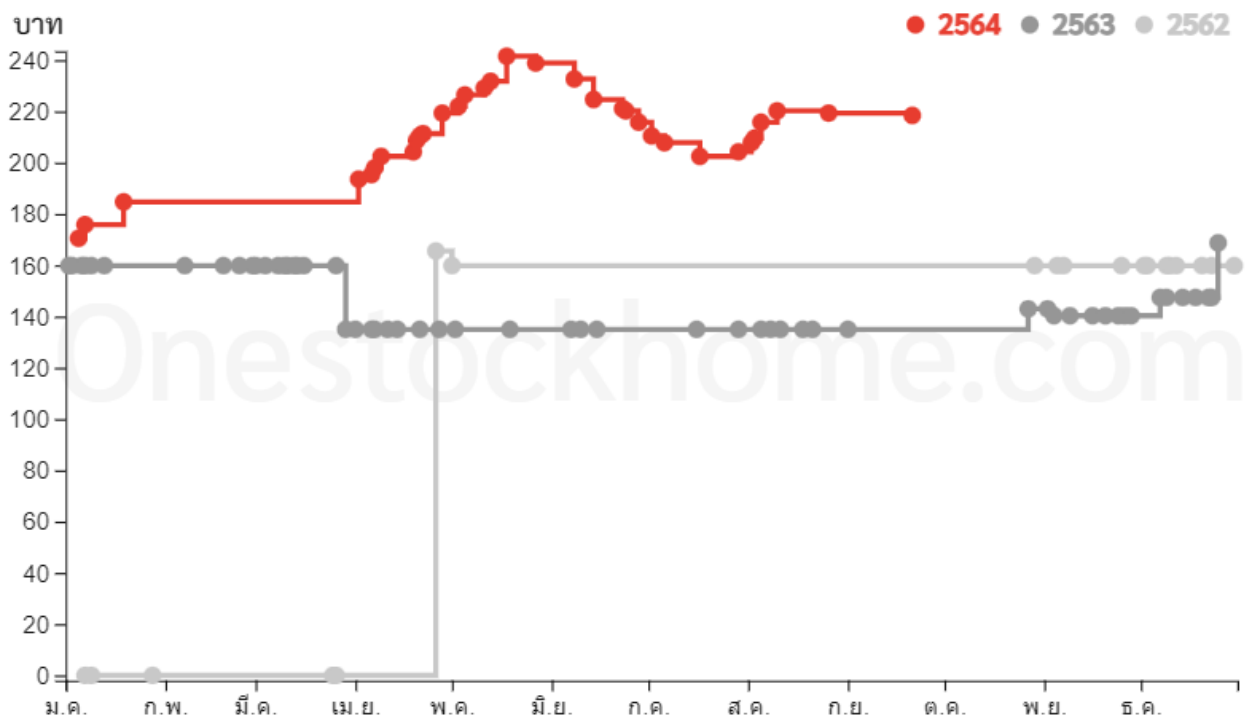
Floors, Beams & Columns completed



Plumbing 1<sup>st</sup> fix

Historical Round SCG SR24 RB12 length of 10 m. 8.88 kg / line.

Unit : Line | Size: Weight 8.88 kg



## 2. Termite System

- 2.1. As standard, we will include a Termite system under the house floor slabs. This is a permanently installed system, whereby we will do the initial charge upon completion of the construction. Future inspections and recharging of the system will be the responsibility of the owner and should be performed every 6 months.
- 2.2. Prior to closing the sub-floor level, we will also do a pre-treatment for termites.

## 3. Block wall and rendering

- 3.1. All Exterior & Interior walls construction will be done using Smart Blocks such as Q-Con.

Concrete/Cement bricks are only used for formwork and will never be used as structural or finishing material.

- 3.2. Exterior walls will be Double Cavity Walls, whereby the total thickness is adjusted according to the column width.
- 3.3. Interior walls will be a combination of double walls and single wall construction depending on the design and layout. Unless otherwise specified, there will be no visible columns along the walls as the design of the block walls will be adjusted to hide such details.
- 3.4. All interior and Exterior walls will be rendered using a Ready-Mix Lightweight Brick render mortar, ensuring a continuous, compatible mixture and even wall finish throughout the house.
  - 3.4.1. Additional to the wall plaster, a LANKO 101 skim coat will be applied both interior and exterior the hide minor imperfections left from the rendering process. This cost is included in our standard scope of work.
    - 3.4.1.1. This additional step ensures that wall repairs or modifications in the future can be repaired without any visible seams after painting.
  - 3.4.2. LANKO 322 Waterproofing additive is added to the rendering cement where the walls are exposed to moisture such as bathrooms and wash areas.
- 3.5. All windows and door frames will have re-enforced lintels. We do not use pre-cast lintels as these are cast in place with steel reinforced concrete, ensuring maximum stability and strength, and are adjusted to the full width of the wall.
  - 3.5.1. It is important to know the type of counters will be used at this stage (Bathroom, Laundry, other). If the bathroom counters are affixed to the wall and not supported on the floors, then we will cast a Steel Reinforced lintel in place to affix during the block work.
- 3.6. Steel wire mesh will be added to stress points along the interior and exterior of the walls to reduce cracks in the rendering.
- 3.7. Once the block walls are completed and prior to rendering, we will install the remaining electrical and plumbing first fix items. These are mainly the electrical conduits, water pipes and other drains.
  - 3.7.1. Once this work starts, it's good to know your choices of electrical switches and sockets that will be used as we will install the back boxes in the walls. Standard switches and sockets will utilize a 2"x4" back box, however if specialty designer switches and sockets are used, then we must order the matching back boxes for such.
    - 3.7.1.1. Example of Specialty Switch and Socket Bars: <https://www.artdnathailand.com/product-category/a77-series/>
    - 3.7.1.2. Example of Standard Switch and Socket Bars: <https://www.artdnathailand.com/product-category/a88-series/>
  - 3.7.2. It is also important to select the type of sanitary ware (bathroom faucets, Shower Mixers and more as these will dictate the installation method and locations. This is changeable up to the point where the tiling work will start.
  - 3.7.3. During this stage it will be important to know the location of the various lights, although changes are relatively easy to make up to the point where the ceilings are installed.



Q-Con Cavity Walls



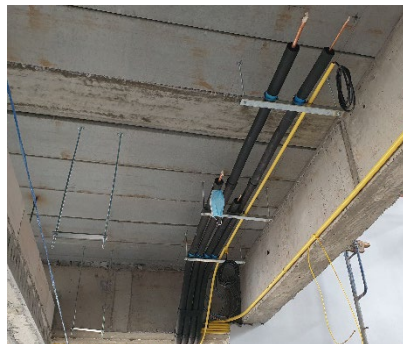
Reinforced lintel for countertop, Plumbing 1<sup>st</sup> Fix.



Steel wire mesh reinforcing for plaster



Electrical 1<sup>st</sup> Fix, (Require switch, socket & lighting positions)



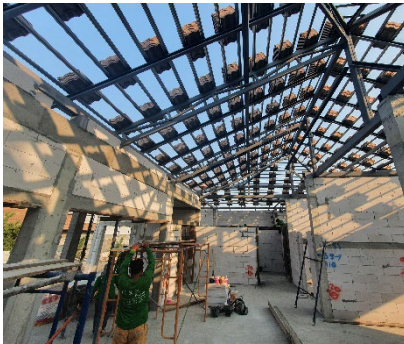
Air Condition 1<sup>st</sup> Fix (Piping & Insulation)



Rendering for future wall tiles fitting

#### 4. Roof

- 4.1. The roof structure will be constructed of Structural steel, coated with rust protective paint, and affixed to the house's main structural columns.
- 4.2. The roof tiles are expected to be shingle tiles installed on OSB-3 Board, which will be treated and sealed with a moisture proof barrier. The final choice of color for the roof shingles is TBC.
- 4.3. Below the OSB Board, we will install Rockwool Thermal Insulation.
  - 4.3.1. Thermal insulation such as SCG Stay Cool 75mm can be installed above the second-floor ceilings, if requested.
- 4.4. Rain gutters, downspouts and roof drainage are included in our budget, however the final choice of model and colour are to be confirmed.
- 4.5. Concrete roof slabs are rendered and sealed with LANKO 226 Flexible Waterproofing Cement prior to painting.
- 4.6. We have provisioned for the Roof Cornices and Architraves and the final costs thereof will be confirmed based on the final selection.
- 4.7. Optionally to the Shingles Roof, we could also propose a rigid roof tile. The average cost of roof tiles are less than those of Shingles and the expected lifetime of roof tiles also exceed that of shingles, however the cost of the steel structure will increase due to the added weight of roof tiles.



Roof steel structure & battens



Rockwool insulation



Roof completed

## 5. Floor and Wall tiles

- 5.1. We will include the floor and wall tiles with a preliminary budget for the tiles itself. Labor and installation are included in our costing, based on the areas as defined in the final BOQ.
- 5.2. The final choice of tiles might affect the cost of material and labour with regards to the installation such as for Mosaic Tiles and Oversized tiles. Marble & Granite also requires specialty cutting and finishing which will increase their costs respective of the chosen option.
  - 5.2.1. For your tile selection, please keep in mind how you want to finish the edges on steps, and corners on wall tiles. If you were to choose a "Single Bull Nose" tile edge on steps, then it's important to ensure the tiles are made with a matching edge colour to allow for such.
- 5.3. Engineered floors are accounted for in our preliminary B.O.Q. The final colour options, board size and installation detail are still pending. The Quote's budget allows for Tb 1,600/sqm as per your request. Attention must be given to the floor skirting boards and edges, such as where the Handrails are to be fitted.
  - 5.3.1. Please pay attention how the wooden floor skirting boards will join with the door frames and architraves. Often this detail is not accounted for and can cause a great mismatch when completed.



Half Bull Nose Tile Edge, with Matching edge colour



Half Bull Nose Tile Edge, Mismatch in edge colour

Installation of Sanitary fittings prior to tiling

## 6. Ceilings

- 6.1. All interior living space ceilings will be of high-quality gypsum board, affixed with a galvanized steel framing. The final design will detail the style and finish of the ceilings.
- 6.2. Exterior ceilings and other wet areas such as bathrooms will have waterproof gypsum ceilings of which the design and finish will be according to the final plans.
- 6.3. We do not account for any other types of ceiling detailing such as wooden parquet or similar, however we can include such if required by the final designs.

6.4. Ceiling designs will be updated pending the Lighting Designer's recommendations.

## 7. Painting

- 7.1. All Exterior walls will be primed with JOTUN ULTRA PRIMER, and for the finish paint we will use JOTUN JOTASHIELD ANTIFADE COLOURS.
- 7.2. All Interior walls will be primed with JOTUN EASY PRIMER, and for the finish paint we will use JOTUN MAJESTIC TRUE BEAUTY Paint.
- 7.3. Ceilings will be primed with NIPPON VINYLEX Model H-90 Paint and finished with NIPPON VINILEX Model T-900.
- 7.4. Any slab concrete roof sections will first be sealed with a concrete waterproof coating.

## 8. Handrails & Stairways

- 8.1. Any handrails, Stairway rails or other guard rails will be included in our BOQ along with drawings showing the details thereof.
- 8.2. Our preliminary estimate includes for the use of steel with a high-quality finished paint. Other materials such as Stainless Steel can be utilized and will depend on your selections.

## 9. Doors & Windows

- 9.1. Main Entrance & Interior Doors, Skirting boards & Architraves.
  - 9.1.1. All interior doors will utilize solid wood door jambs. These will be finished with architraves and skirting boards along all floors where possible. We include all door hardware.
  - 9.1.2. Door locks will be Mortise Locks and will include a Master-Key lock system throughout the house, for both internal and external doors.
  - 9.1.3. Attention will be given to the final design specifications of the interior doors. Our current budget allows for custom made solid wooden doors which accounts for the premium option. Alternative options are available and can reduce the cost by up to 40~50% overall.
- 9.2. Windows & Sliding Doors:
  - 9.2.1. Currently our estimates include for aluminum profiles (German engineered).
  - 9.2.2. UPVC windows are available at your request and may lead to a reduction in the overall cost of construction.
  - 9.2.3. The window panels are Clear Laminated glass (greater security & increased insulation).
    - 9.2.3.1. Kindly keep in mind if alternative glass colours will be required.
  - 9.2.4. Our BOQ furthermore includes insect screens on all Aluminum windows and doors. You may choose to remove some where they might not be required, this could be a significant saving on the overall cost.

## 10. Electrical Systems & Lighting

We include:

- 10.1. Mains supply from the government junction box. The Mains Circuit Board and Safety Breakers will be of high quality and supplied by SCHNEIDER ELECTRIC.
- 10.2. RCBO Breakers will be used for all power outlet points and other safety risk equipment such as water heaters and water pumps.
- 10.3. All wiring throughout the house and cables are run inside electrical conduits for safety and protection. All concealed connections are housed inside junction boxes.



10.4. Switches, power outlets, LAN Cables and USB Charger sockets are provisioned for, however we will explore the models in more detail prior to purchase and installation.

10.5. Interior, Exterior and Pool lighting will be of LED type unless specified otherwise.

10.6. We have not accounted for any Smart Home systems nor a CCTV System.

10.7. We are not able to give an estimate for the Mains Power Connection from the government. Please keep in mind that due to the size and power requirements of your home, you may be required to install a new 3 Phase transformer. The cost of such may be in the range of Tb 200,000 to Tb 350,000. Normally the PEA will only assess this near completion of your home, as they must first inspect the home electrical installation on site prior to giving the final details.

## 11. Sanitary Ware

11.1. All main sanitary ware is provisioned for by us such as Bathtubs, Sinks, Faucets, Shower Screens etc. Our budget will allow for a substantial amount however the final cost thereof will depend on your choices.

## 12. Air Conditioning System & Ventilation

12.1. A complete Air Conditioning package has been selected throughout your home.

12.2. There is the preliminary budget allocated for all piping and insulation work, however the final cost thereof will be confirmed after installation and based on the actual material used.

12.3. All bathrooms will be fitted with Air Extraction ventilators.

## 13. Swimming Pool

13.1. The pool is currently designed for an overflow system. One of the factors that increases the cost of our pools are that they are always built with piling and footings. This is essential for the structural longevity of the pool and specially to ensure that the overflow edge stays level for its entire lifetime.

13.2. Our costing will be inclusive of all pumps and equipment as required. As a standard, we include a saltwater system.

## 14. Fishponds

14.1. The current design does not include for any fishponds or lotus ponds; however, we can include such if required.

## 15. Driveway

15.1. The driveway is included with a cobble stone finish.

15.2. The cobble stone will be laid on top of a steel reinforced concrete slab, allowing for the stone thickness to be reduced and saves on cost.

## 16. Garage & Gate

16.1. We will build a double car park garage.

16.2. The garage doors are not provisioned in our BOQ as we need to review the final material selection.

16.3. The design of the front gate will need to be finalized prior to order. Our costing includes a preliminary estimate for such

16.4. Our final proposal and BOQ will specify the electric gate motor to be installed. (Pending gate design)

## 17. Boundary Wall

- 17.1. Currently we have estimates in for a boundary wall which will extend to 2.0m in height above ground. The wall will be designed with large footings and steel reinforced beams below ground to ensure stability and strength.
- 17.2. As a standard, we will include electrical distribution (Wall lights) and water distribution (Garden Hoses) along the walls. We have not provisioned for any special detail in the wall.

## 18. Landscaping

- 18.1. We have not made any provision for landscaping, other than the clearing and leveling of the property once the construction work is completed.
- 18.2. Normally, large trees should be planted prior to closing the boundary walls, however most areas on your property will be reachable by crane near the end of construction.
- 18.3. Kindly let us know if you wish to have a landscaping proposal from us during construction.

## 19. DETAILING AND FINISHING

### 1. Built-in Furniture

- 1.1. We have not accounted for any built-in furniture.
- 1.2. Kindly keep us informed of any specific electrical requirements with regards to build-in furniture, cabinets or other items. These may include sockets, lights, security cameras and more.

### 2. Kitchen & Kitchen Appliances

- 2.1. We have companies whom we work with for build-in kitchens however this is once again a cost which can vary greatly due to style, design and material used. Therefore, we have not provisioned for the cost of any fitted kitchen nor the appliances thereof.
- 2.2. It will be important to have a good idea of all the kitchen appliances and their final locations when we do the electrical 1<sup>st</sup> fix.
- 2.3. If your kitchen will utilize gas, then we'll need to add a LPG supply system.

### 3. Loose Furniture

- 3.1. We do not account for any loose furniture.

### 4. Curtains and Blinds

- 4.1. We do not account for any curtains or blinds; however, we can assist with this part as we've done installations on previous builds.

## INSURANCE

Our cost of construction includes a Builder's Risk Insurance, and the value will cover the full value of the property.

## WARRANTY

1. Upon completion of all works, you will be issued with two (2) separate Certificates of Warranty.
2. The first will be a "Fit and Finish Warranty", whereby all work performed at your newly constructed home will cover all labor and material defects for a period of one (1) year, starting from the date of completion.
3. The second will be a "Structural Warranty", whereby all structural work will be covered by a five (5) year warranty.
  - a. The structure is classified as any Internal or External load-bearing component that is essential to the stability of the building or any part of it, including Foundations, Floors, Walls, Roof, Columns & Beams.

I trust this information will be helpful in your decision making and we'll be pleased to answer any other questions you may have.

## CONTACT

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