Conseil Européen des Economistes de la Construction
The European Council of Construction Economists

ROTTERDAM
The Nederlands

October 2017

QS/EC Competencies

Part #2 – v4

Part 2 –> 2 questions !

- Team Building :
  the place of the QS/EC in the design /construction phase ?

- Process of design / construction phase / Schedule
  What the QS/EC does ?

QS/EC Competencies Part 2

Answers received :

- DENMARK
- FINLAND
- FRANCE
- GERMANY
- IRELAND
- HUNGARY
- SPAIN
- THE NETHERLANDS
- UNITED KINGDOM

And soon … Estonia – Switzerland

DENMARK

From Rasmus PEDERSEN

Danske Byggeøkonomer - Copenhagen

(DACE, Danish Association of Construction Economist)

DENMARK

1 // The building team

We have several setups depending if it is private or public building project.

In Denmark we do not have a separate profession like QS or similar.

Budget estimates are usualy made by Architects and/or engineers in before construction start and then Contractors usually take over and take responsibility regarding quantities and budgets.

PPP (Private/Puplic/Partnership) is also used in Denmark the last years.

DENMARK

2 // Schedule

Depending on Project size and complexity and type of new building/ renovation/ restauration is to be done, the setup and team can and will adapt to the project.

As an appendix to this scheme, Rasmus add a overall description (in English) of the typical design phase and consultant delivery made by Architect and Engineers in a typical Project. (50 pages).

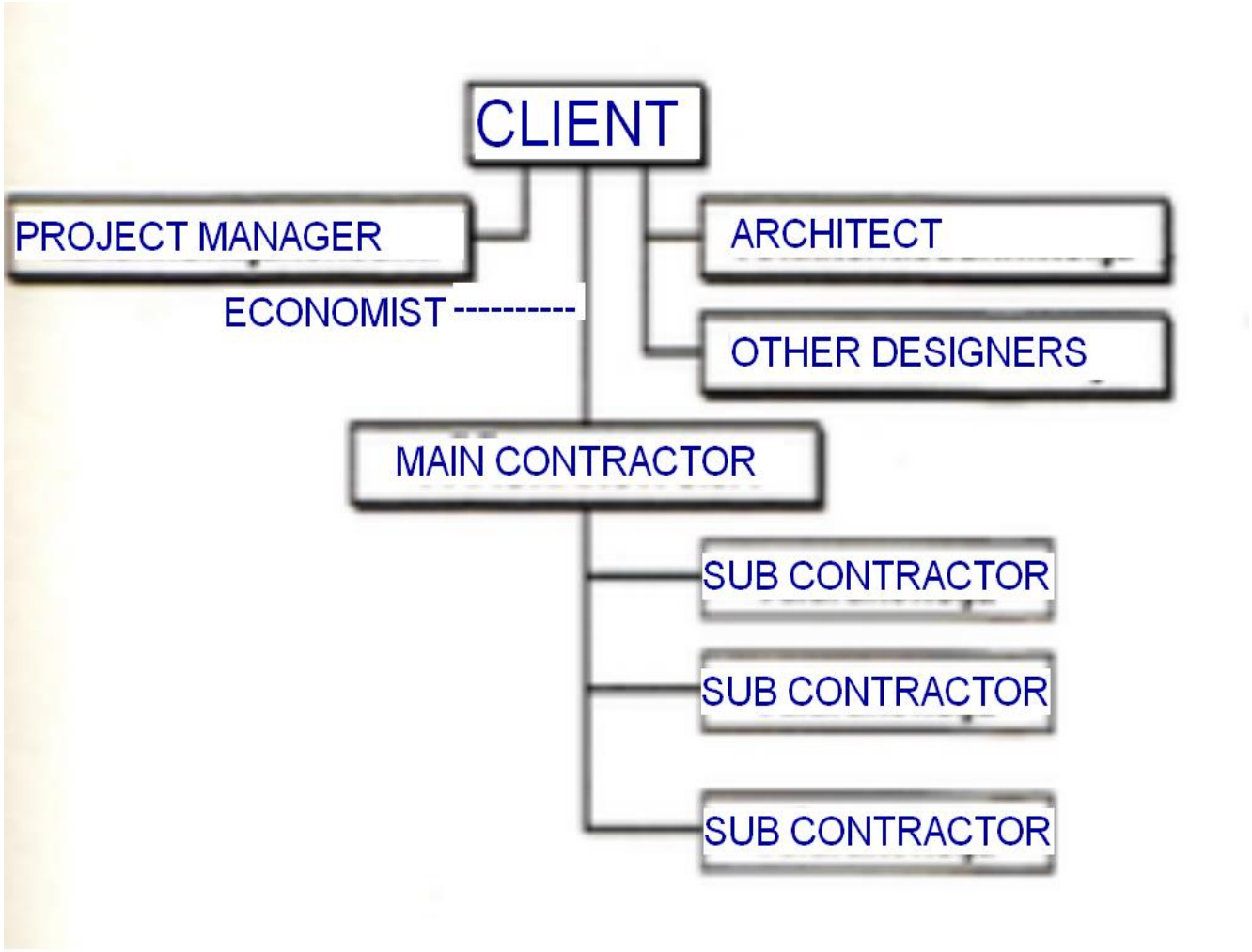
FINLAND

From Ari Joro

RAPAL OY - Helsinki

FINLAND

1 // The building team



FINLAND

1 // The building team

The customer/client is in the central point because he is the investor. The client will choose a project manager, who has basic economic skills. Real estate developer or project management contractor led projects are rather common too.

The client with the project manager will choose an architect, either directly, or through a public consultation or even an architect competition. The economist is usually hired at the beginning of design phase by the project manager (sometimes the architect) with the client. The project manager will choose several skills through structural engineering, thermal, electricity, environment, scenography, kitchen equipment and so on.

FINLAND

1 // The building team

The project is then defined by the project management team, first in a summary way, and then in a more detailed way according to the progress of the studies, more economic skills and the economist is then needed. Design stage is usually in two phased and economic feasibility will be checked twice.

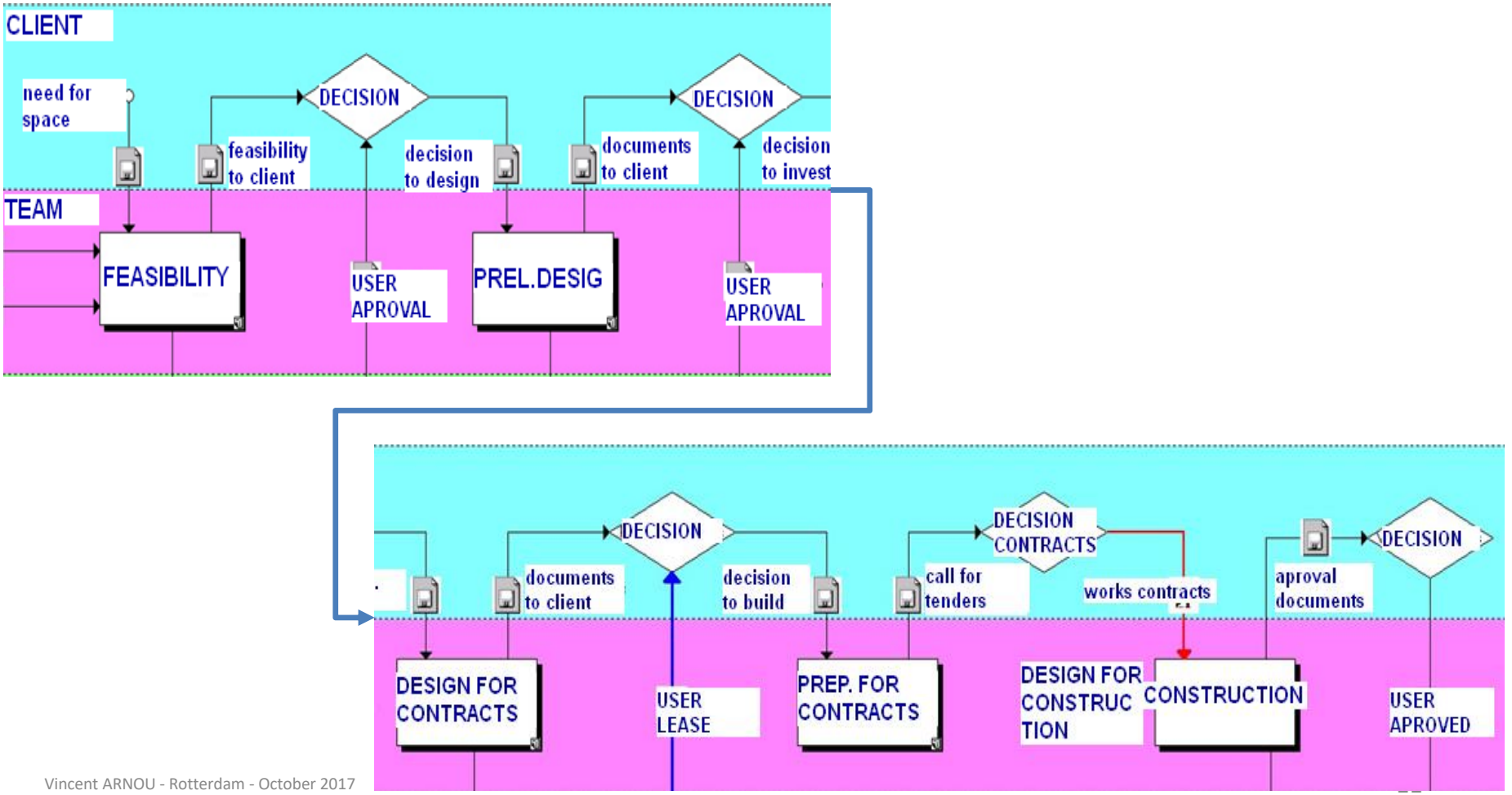
When design stage has been completed for tenders, a call for tender will be launched for the main contract and HVAC and electrical subcontracts. Once the companies are known, the site can start, minor subcontractors can be chosen later. The project manager will then interface between the various players in the project management team, the client and the contractors. The architect is officially required as a Chief Planning Officer.

The economist or the architect is never the leader of the project management team in construction phase there is always project manager, usually hired consultant, some clients have own project managers.

The main requirement for a building permit for a site governed by a detailed city plan is that the construction project conforms to this plan. A deviation from a detailed city plan requires a deviation approval.

FINLAND

2 // Schedule



FINLAND

2 // Schedule

Definition of the program, usually with an economist. The budget of an operation based on the program, feasibility studies with estimation.

During two design phases, the architect and the entire project team will refine the project and define the building more and more precisely. The architect will define, in agreement with the client, the materials and the constructive modes. Materials of different manufacturers will be prescribed through a descriptive document. The economist will define the price of the building based on designs in both phases.

In tendering stage administrative formalities are established and officials and companies are consulted on the project by designers and the project manager.

FINLAND

2 // Schedule

Usually Bills of quantities that will be given to contractors during tender are not used, contractors can buy Bills of quantities based on tender designs from QS consultants who sell them to all contractors.

The project manager will analyze all the offers according to the pre-defined selection criteria. He will explain his analysis to the client who will be responsible for decisions selecting the contractor for each of the trades.. Financial accounting update based on tenders. Building permit is needed before construction start.

Mainly, the project manager will lead and direct the works throughout the duration of the works.

The economist is only needed in building disputes.

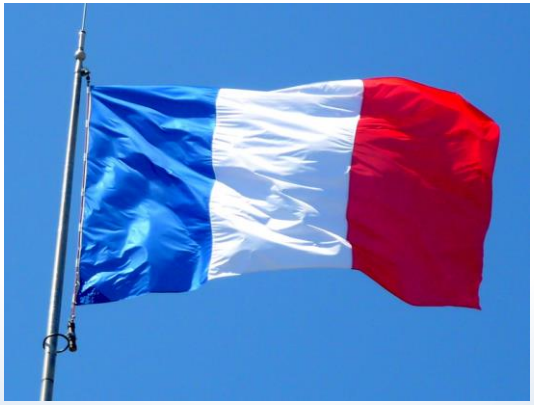
The final acceptance by the client and the site is finished. Now comes the time of the administrative and financial closing of the operation.

The economist is only needed in adjudication or even in court.

FRANCE

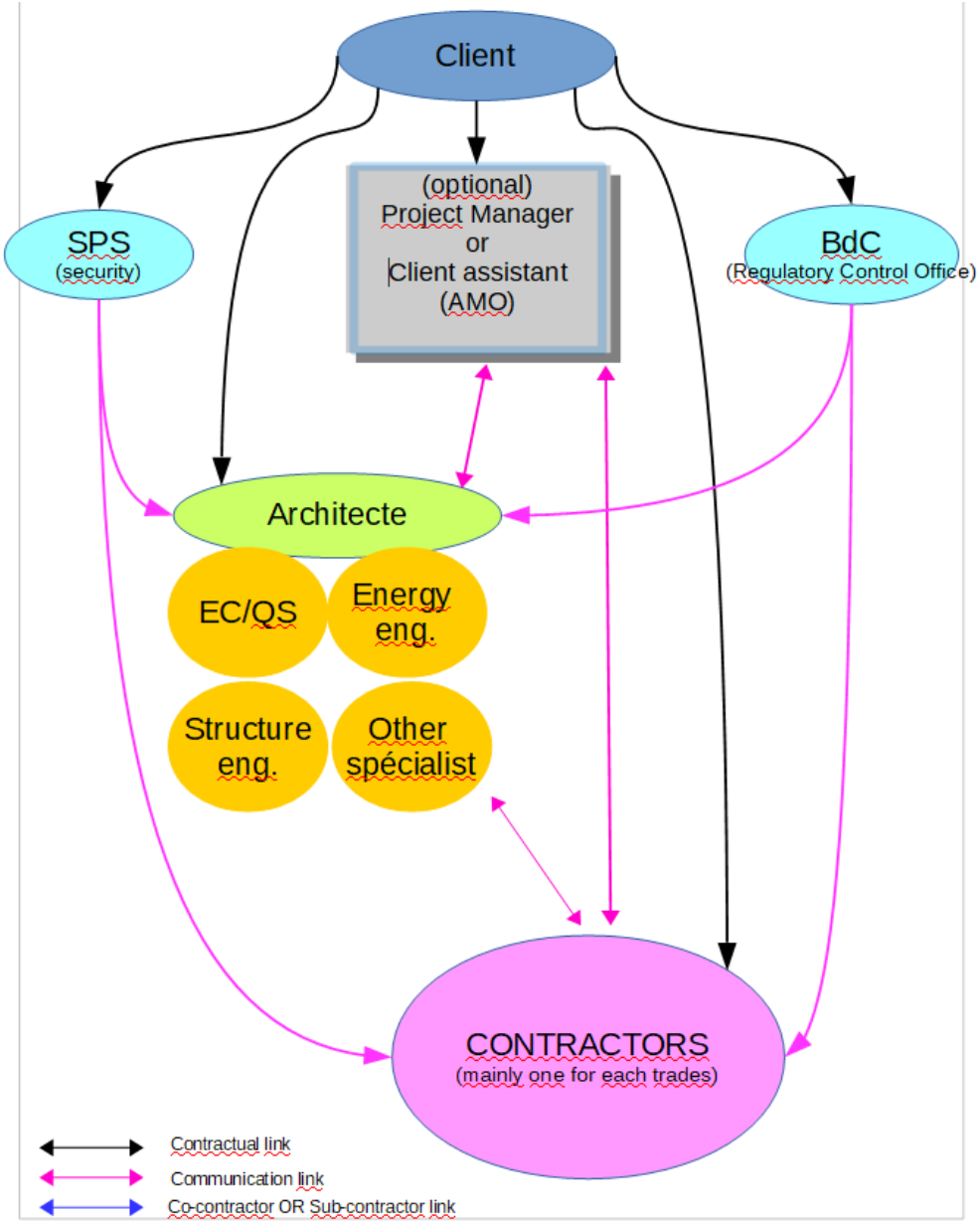
From Vincent ARNOU

ESPRIT TERRE INGENIERIE - Angers



FRANCE

1 // The building team



FRANCE

1 // The building team

The customer is the central point because it is the payer.
Consider the case of a project where the needs and feasibility have been defined previously.

The client will choose an architect, either directly, or through a public consultation or even an architect competition.

The chosen architect will be surrounded by several skills through the economist, structural engineering, thermal, electricity, environment, scenography, kitchen equipments, ...

The project is then defined by the project management team, first in a summary way, and then in a more detailed way according to the progress of the studies.

FRANCE

1 // The building team

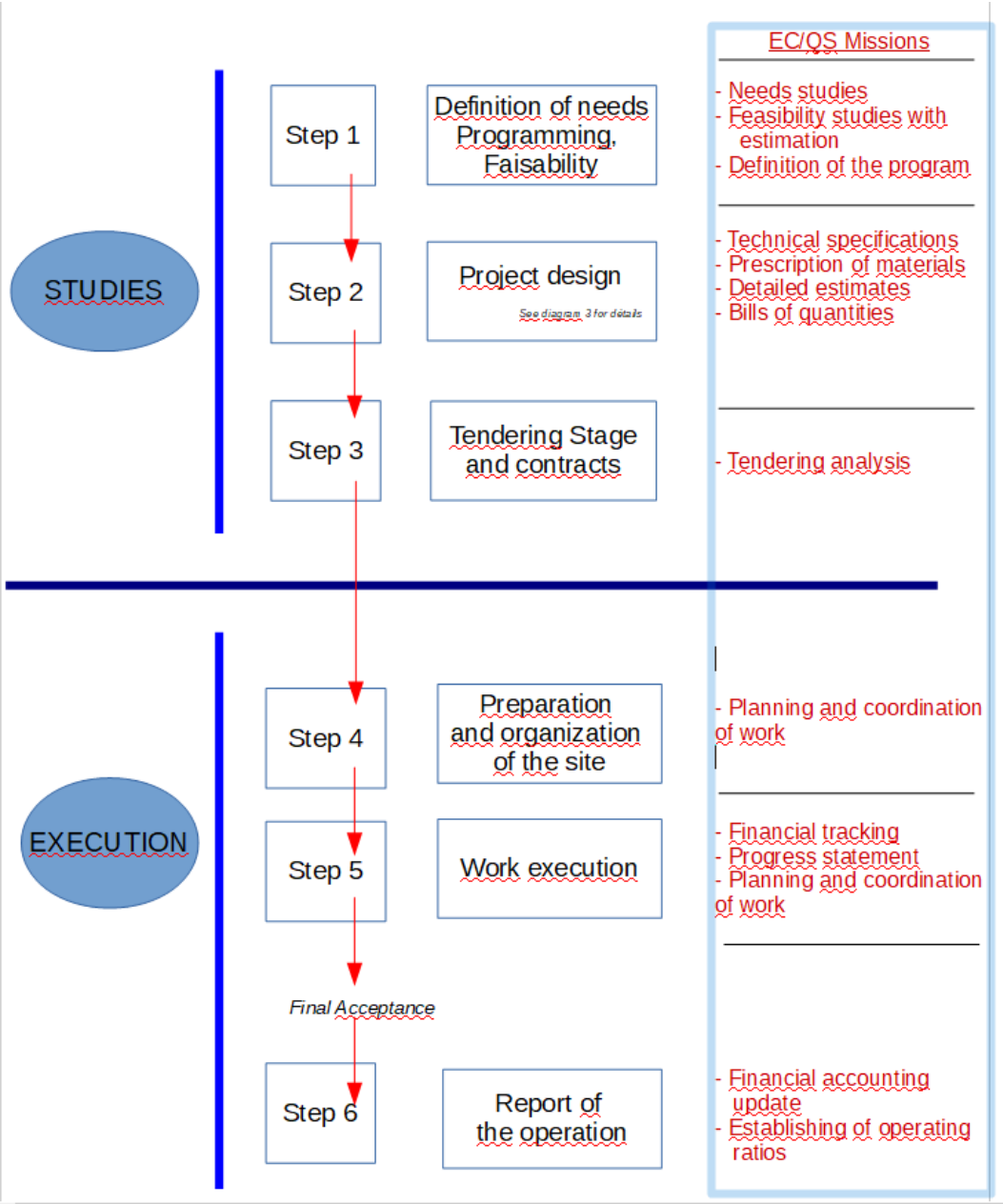
Once the design stage has been completed, a call for tender will be launched in order to know the companies selected according to the trade.
Once the companies are known, the site can start.

Sometimes, depending on the complexity and / or the financial stakes, the client can take a conductor to direct the studies and the execution of the works. The project manager will then interface between the various players in the project management team, the client and the contractors.

In some rehabilitation projects, where an architect is not compulsory (legally), the economist may be required to be the leader of the project management team.

FRANCE

2a // Schedule



FRANCE

2a // Schedule

Step 1

A program is established, usually with an economist.
The economist will calculate, among other things, the budget of an operation with regard to a program defining as precisely as possible the surfaces, the quality of construction and the intended uses for the building(s)

EC possible missions (holder of the mission or assistant) :

- Needs studies
- Feasibility studies with estimation
- Definition of the program

FRANCE

2a // Schedule

Step 2

- ESQ stands for Equisse / preliminary design .
  At this stage, the architect will draw the first views of the buildings and the layout of the rooms.

- APS means “basic pre-design”
- APD means “final pre-design”

During these two periods, the architect and the entire team of project will refine the project and define the building more and more precisely.
The economist will define, in agreement with the architect and the client, the materials and the constructive modes - he will establish the quantities of the works and determine the price of the building.

Materials of different manufacturers will be prescribed through a descriptive document.

FRANCE

2a // Schedule

At the ESQ and APS stage, the project estimate is provisional in public market (and often in private market).
The estimate of the building becomes final in the APD stage.

- PRO means Projet – The building is precisely defined. No major change

Some modifications of detail are then established or corrected before consulting the contractors

EC missions *for ESQ/APS/APD/PRO stages - For the sole purpose of maintaining the client's budget while respecting the architecture*
-Technical specifications
- Prescription of materials
- Quantitative
-Detailed estimate

- EXE means "execution mission" … but we still keep in the design stage!

During this period, the latest retail plans are drawn up, as well as the quantities in case they are given at the time of consulting the contractors, which is not always the case in France according to the projects and regions.

FRANCE

2a // Schedule

Step 3

- ACT means “tendering stage”

Administrative formalities are established and companies are consulted on the project.
The economist will analyze all the offers according to the pre-defined selection criteria.
He will explain his technical analysis report to a commission that will be responsible for selecting the contractor for each of the trades' co-operatives.

EC missions

- Analysis of the offers of the companies according to several criteria defined previously with the client

FRANCE

2a // Schedule

Steps 4/5

- DET means management for the execution of works

VISA means verification of execution plan or details

Mainly, the architect will lead and direct the works throughout the duration of the works

OPC means Organization, Planning and Coordination of work

EC missions

-Sometimes, rarely, the EC may be called upon to manage the project
-More often, the economist intervenes in a complementary mission called "OPC"
-Financial tracking
-Progress statement

FRANCE

2a // Schedule

- AOR means assistance in the final acceptance

EC missions

-This mission is devolved mainly to the architect, but in the case where the OPC mission is allocated to the economist, this one deal with the organization of the final acceptance.

FRANCE

2a // Schedule

Step 6

After the acceptance, the site is finished. Now comes the time of the administrative and financial closing of the operation.

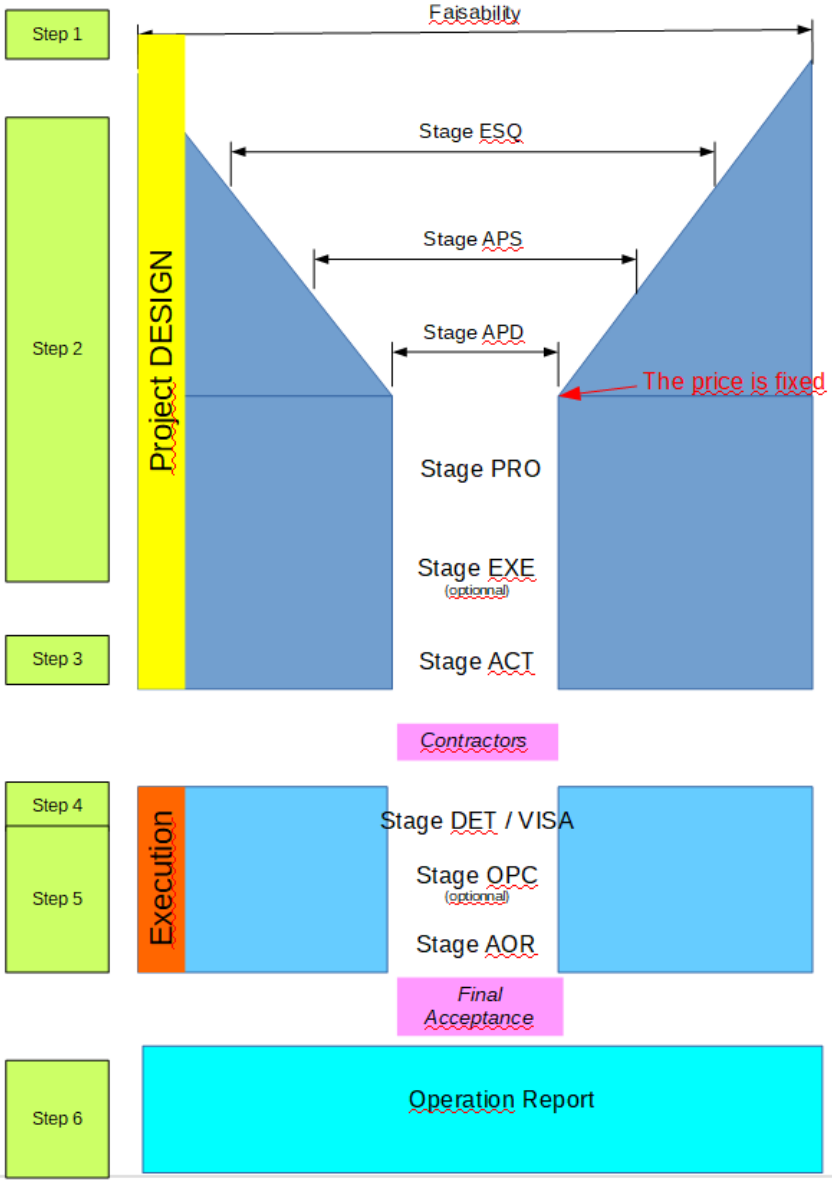
EC missions

-Financial accounting update

-Establishing of operating ratios

FRANCE

2b // Detailled Schedule



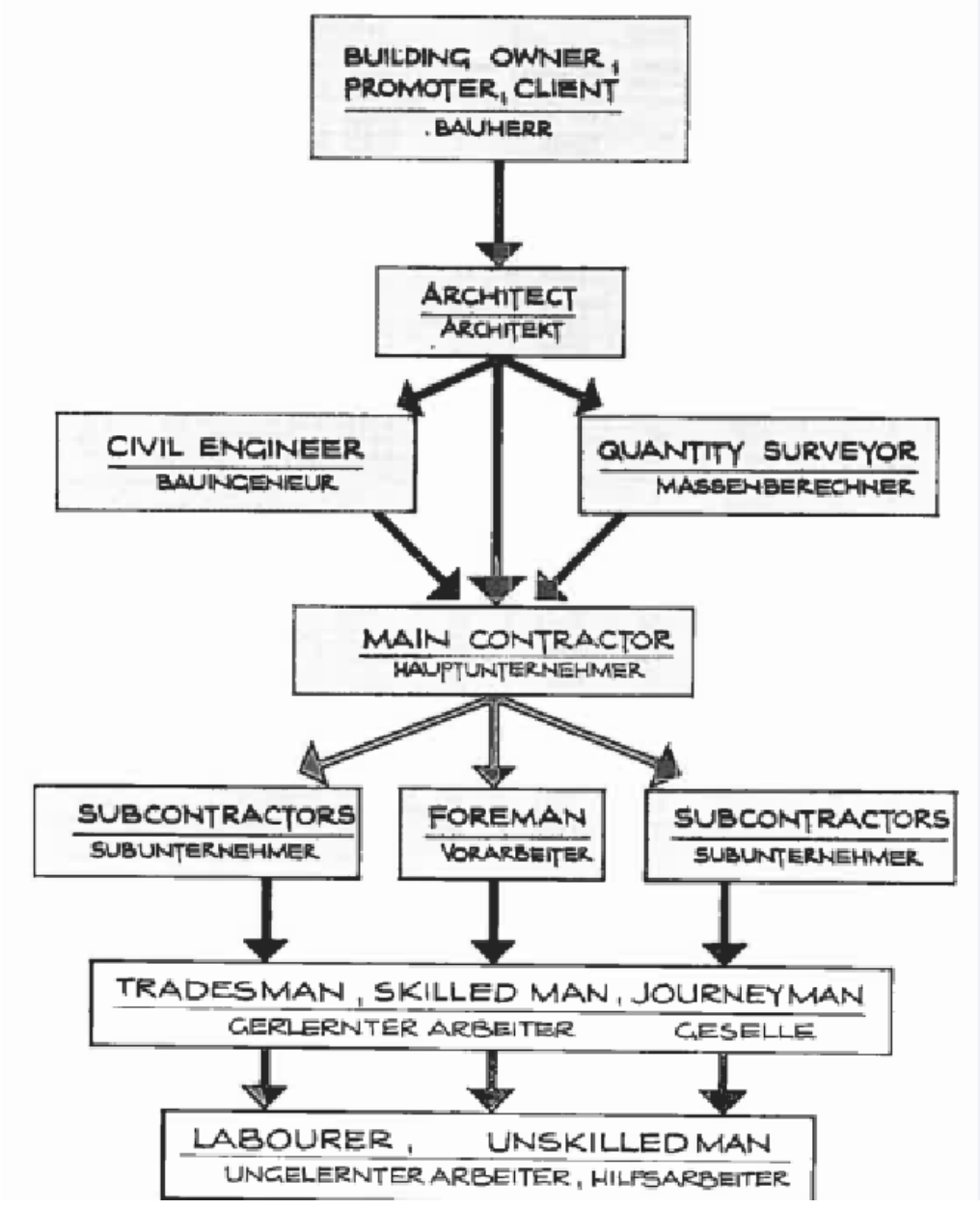
GERMANY

From Peter SCHMID

Ingenieurbuero Schmid GmbH - Munich

GERMANY

1 // The building team



GERMANY

1 // The building team

Team of building is architect, engineers M&E installation, structural engineers, engineers for fire protection, landscape, probably project management and some more special if necessary (soil etc.)

EC / QS services are under the umbrella of architect if he is unable to carry out these services.

We are carrying out EC services for architects (and building owners sometimes as a controller). The steps are cost estimate (pre design phase), cost calculation (design phase) and cost control during construction phase.

GERMANY

1 // The building team

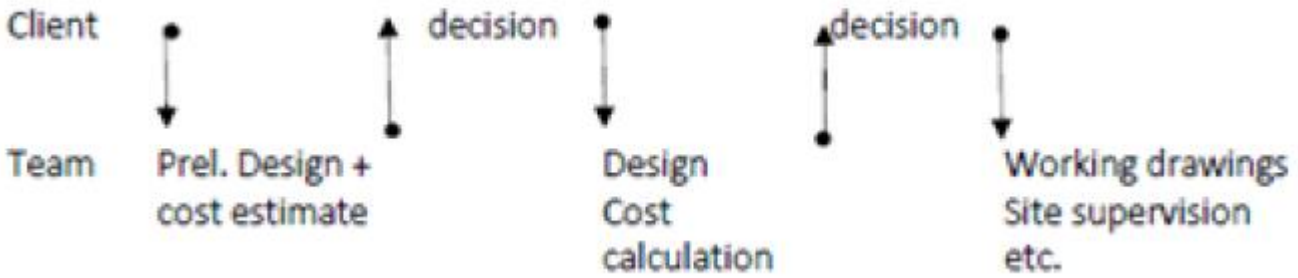
Generally we have in Germany as known our HOAI – that means fee reglementation for architects and engineers (depending on costs, difficulties of the project scope of services etc.).

New issue is from 2013, cost consultancy services are here and now much more detailed and important than before.

We cannot longer estimate on a € / m² BGF-basis but have now to calculate elements in accordance with our DIN 276 (cost groups).

GERMANY

2 // Schedule



Cost planning services are during pre-design phase and design phase.

Afterwards, during tender documents is the control costs.

In the construction / pod contract phase there are only controlling services, carried out by architects / site supervision.

Finally is to prepare final account, also to win new figures for new projects.

The responsibility also for these results are with the architects.

IRELAND

From Gerry O'SULLIVAN
MULCAHY McDONAGH & Partners

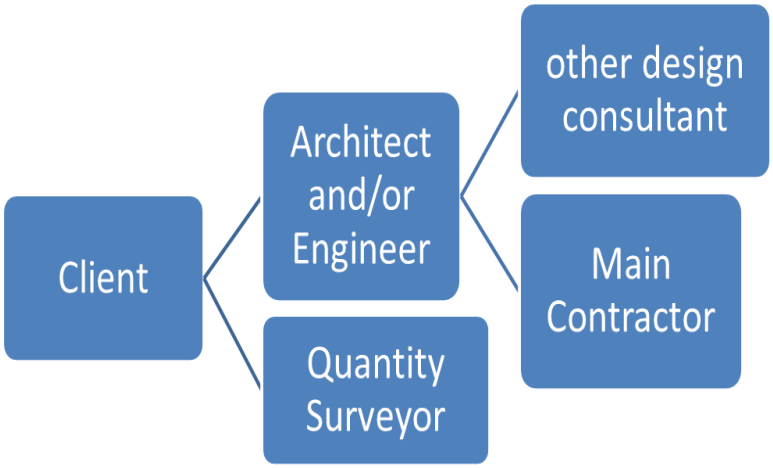
IRELAND

1 // The building team

Cost Consultant engaged either direct by Client or by Architect/Engineer as part of the Design Team

Role to advise client/design team on preparation of cost estimates/ cost planning/ value engineering/ procurement options/ tender documentation/ tender reports/ cash flow analysis/ post contract cost management including negotiation of claims and valuing of changes /payments and final accounts/

EMPLOYER DESIGNED CONTRACTS



IRELAND

1 // The building team

Cost Consultants also engaged by most Contractors to prepare estimates, price tender documents, procure subcontract tenders/ cash flow analysis/ post contract cost management including submission of claims/quotes for changes/claims , claims for interim and final payment, negotiations of final accounts

Cost consultants may work in building, civil engineering and service sector of construction -some may specialize in one sector.

Some cost consultants are engaged by either clients or contractors as specialists in preparing claims including delay and prolongation claims and disputes

Some cost consultants act as Court/Arbitration expert witnesses and in addition practice as arbitrators/ adjudicators/ conciliator-mediators

IRELAND

2 // Schedule

STAGE 1 PLANNING STAGE (PUBLIC) – i) Feasibility Stage (Private) RIAI Works Stage 1 -Inception

Step 1 = The cost consultant will cost estimate the feasibility studies and issue a preliminary report to assist in developing the definitive project brief – preliminary brief report including capital costs and sometime comment on life cycle costs – the project programme will be agreed with the client and design team – cost consultant will assist

Client confirms approval of design and design expenditure

IRELAND

2 // Schedule

STAGE 1 PLANNING STAGE (PUBLIC) –ii) Design Stage (private)RIAI Works Stage 2 -Outline Proposals

Step 2

-Design team assess output requirements – budget checked- value management- procurement strategy -contract type

IRELAND

2 // Schedule

STAGE 2 PLANNING DEVELOPED (PUBLIC) –ii) Design Stage (private) RIAI Works Stage 2 -Outline Proposals

Step 3

- Develop outline sketch scheme – Cost consultant prepares outline cost plan - identifies cost risk – client/DT review and assess outlines design and outline cost plan

IRELAND

2 // Schedule

STAGE 2 PLANNING DEVELOPED (PUBLIC) –ii) Design Stage (private) RIAI Works Stage 3 -Scheme Design

Step 4

- Develop the approved outline design/prepared for statutory approval/ develop the cost plan /value engineering options/assess buildability of design/ review cost risks/ review project programme/schedule / On completion client approves design and cost and scheme submitted for statutory planning approval

IRELAND

2 // Schedule

STAGE 2 PLANNING DEVELOPED (PUBLIC) –ii) Design Stage (private) RIAI Works Stage 4 -Detailed Design -Building Regulations/Works Stage 5 Production Information

Step 5

- Subject to outcome of Planning – proceed to develop detailed design-cost consultant will review the developed cost plan as design is developed -prepare a pre-tender cost check

IRELAND

2 // Schedule

STAGE 2 PLANNING DEVELOPED (PUBLIC) –iii) Tender (private) RIAI Works Stage 6 - Tender action -Stage 7 Project Planning

Step 6

Agree procurement options -select tenderers – (pubic procurement) -prepare Bills of Quantities -on all public projects over 0.5 million euro in value a Bill of Quantities is essential and the quantities are at the client's risk- prepare and issue tender documents – on receipt of tenders analysis offers and prepare tender report- cost analysis and based on tender programme payment cash flow – where budgets exceeded advise / negotiate savings

IRELAND

2 // Schedule

STAGE 3 IMPLEMENTATION (PUBLIC) –iv) Construction (private) RIAI Works Stage 8 - Operations on Site and Completion

Step 7

Manage change controls for costs/ assess payment applications and issue recommendations for payment for architect/engineer to certify/ issue regular cost reports (minimum every 2 months) /monitor contractor's progress and update cash flow requirements/ value changes/ value and advise on contractor's claims/ prepare final account / negotiate contractor's claims where authorized

HUNGARY

From Gyorgy SPANYI
SPANYI PARTNERS Ltd

HUNGARY

1 // The building team

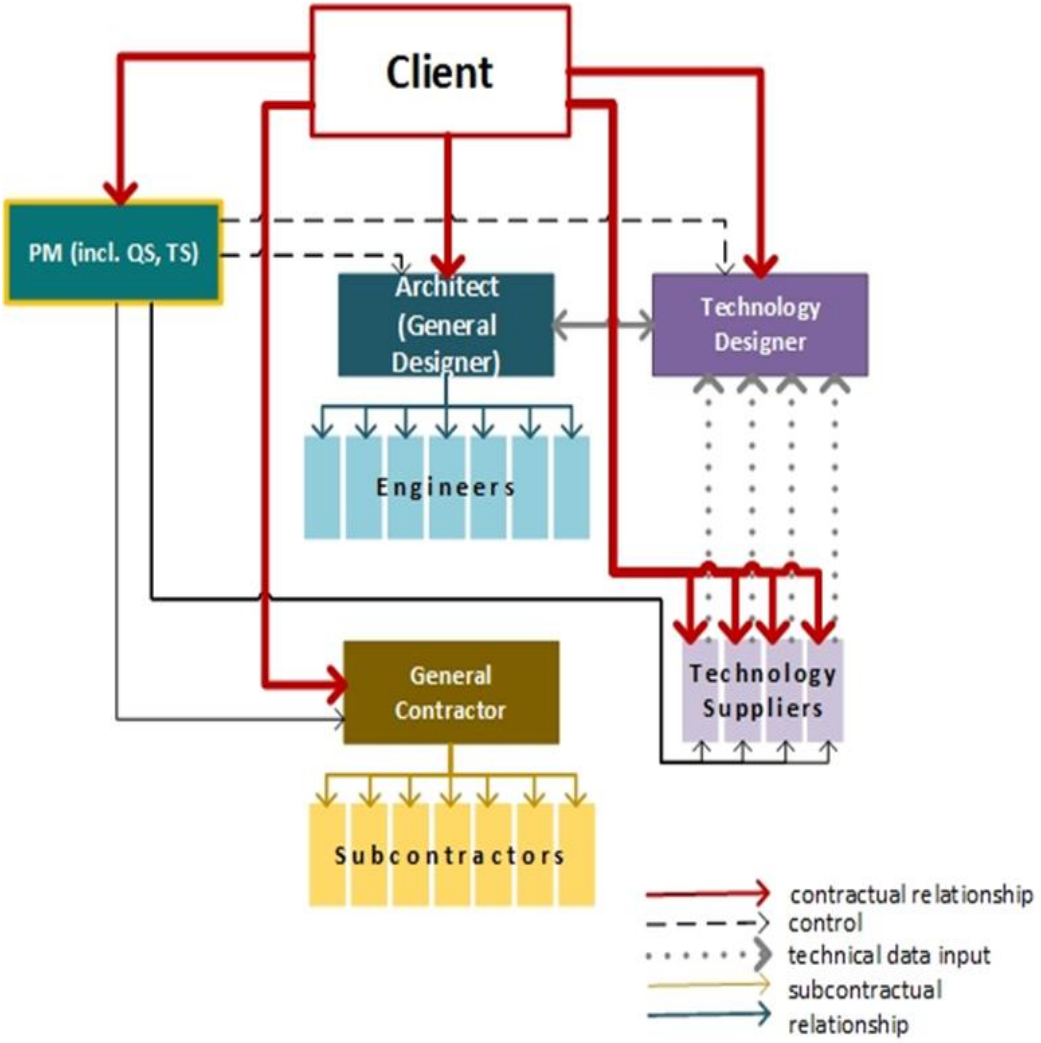
1/ Architect

The architect is responsible always for

- concept design
- building permit design

and usually, but not necessary for the detailed or execution design;

The Architect is responsible for employing the engineering team (structural engineer, mechanical engineer, electrical engineer, etc), therefore we refer to the Architect as “General Designer”;



HUNGARY

Usually the Architect is preparing the B/Q (Bill of Quantities), but oddly enough he is not responsible for its accuracy (B/Q's are often useless). The architect is not responsible for the overall cost of the building he designed (although Clients try to enforce some sort of responsibility, but it is not part either of the legal framework, or of the Hungarian traditions);

Architects must have Professional Liability Insurance, but usually it covers very little amount, moreover I have never heard a customer filing claim against to the architect;

Architects are providing Architect's (and engineer's) supervision of works, what is limited to issues missing or not clear in the design. Quality control is not included in the Architect's scope.

HUNGARY

2/ Project Manager

Project Manager covers three roles:
- project management
- technical supervision
- cost control

the three roles are often performed by the same person (or same company). For larger projects they can be split, but more often than not by the same company;

Project Managers are qualified architects or engineers with university degree;
Project Manager and Cost Manager are not required by law. Technical Supervisor is required.
Technical supervisors must have licence and go through regular training and earn credits for re-qualification due in every two years;
Recently the Project Manager (wearing his technical expert's and cost manager's hat) have more and more role in value engineering works;
Typically the Project Manager is responsible for the procurement (the majority of this task is done by his Cost Manager). In Hungary the vast majority of projects are awarded to a General Contractor;

HUNGARY

The Project Manager hands over the site to the General Contractor and takes over the completed building;

The Project Manager (his Cost Manager) is responsible for cost control during the construction;

The Project Manager (his Technical Supervisor) is responsible for the quality of works;

The Project Manager controls the entire building project;

The Project Manager is not legally responsible for cost overrun (although it is changing);

The Project Manager is (his Technical Supervisor) is legally responsible for improper works.

HUNGARY

3/ Contractor

Usually (but no exclusively) the Client hires a General Contractor who is responsible for the realization of the project;

The General Contractor is selected by competitive tender;

The General Contractor is preparing the proposal for the design documentation provided by the Client. He must prepare a fix lump sum price, including all missing part on the design. His price should be fixed, even if the B/Q turns to be inaccurate;

During the tender the tenderers are allowed to submit alternatives. It is up to the Project Manager if the alternatives are approved or not. It is common, that the scope fixed in the contract is very different from the original design;

The General Contractor works from design prepared by the Architect (=General Designer), although there are several project when the General Contractor is responsible for preparing the detailed/execution design;

HUNGARY

2 // Schedule

The customer is the central point. Unless the customer is a professional developer, he assigns lot of tasks to the Architect (early stage of the project) and to the Project Manager (after he is assigned).
The needs are defined by the Client.

The feasibility is also the Client's responsibility, however it is very common that the Client gets the first figure from the Architect (usually the Architect is selected first) what later turns out be inaccurate.
The Client choose the Architect usually directly, in case of larger public project by public procurement. Architects' competition is very rare..

HUNGARY

2 // Schedule

Architect has total freedom to select his engineering team (structural engineer, mechanical engineer, electrical engineer, soil mechanical expert, acoustic expert, etc.). All the engineers work as subcontractor employed by the Architect. That is why we refer to "General Designer" (always lead by the Architect).
The building program (required functions, floor areas, etc.) is developed by the Architect. Project Manager selected ideally in early stage (conceptual design phase), but often later (after building permit had been granted). It happens that the project management is provided by the Architect, but it is unusual and there is a lot bad experience.

Concept design is developed by the Architect with support of the Project Manager. Project Manager is providing cost control and value engineering. The project Manager drafts the budget.
The same applies for building permit design. I good projects the Project Manager is expected to prepare detailed cost plan prior to submit building permit application.

HUNGARY

2 // Schedule

After Building Permit obtained, the Architect starts to work on the execution design. During design period the Project Manager is expected to exercise value engineering and costing. Oddly, the Architect is preparing the B/Q. However, the Architect is not responsible for the accuracy of B/Q. Recently, in larger projects the B/Q is omitted from the Architect's scope; the PM's Cost Manager is preparing it.

Procurement is the responsibility of the PM. The Architect might be invited to seat in the tender negotiation; his role is limited to comment alternatives recommended by the tenderers.
The Client is responsible for concluding the contract.

HUNGARY

2 // Schedule

Work area is handed over to the General Contractor by the Client.

The PM is chairing all project meetings, his TS is responsible for daily inspection of works, his CM for handling variations and approving the General Contractor's monthly performance. (Monthly payment is the norm).
In Hungary building authorities do not inspect the site. However, there is an obligatory electronic construction log (the most important building document, maintained by the government), where representatives of the authorities are allowed to log in (and they do).

Takeover and commissioning is the PM's responsibility.

SPAIN

From Jordi GOSALVES / Juan LOPEZ-ASIAIN / Sergio VAZQUEZ
CGATE – Spanish General Council of Technical Architecture

SPAIN

1 // The building team

The client is the most important role, they decide what, where and how. The "professional" client normally choose a Project Manager to represent their firm and their interests. Firstly, before beginning the project, they develop a cost / benefits report with the help of QS competences.

The design team must be formed for at least an Architect. This team normally have more professionals, as engineers, building surveyors and of course, a quantity surveyor. The QS develop the project budget, with all the necessary works, complete measurements and reference prices, to get the total amount for the project construction costs.

SPAIN

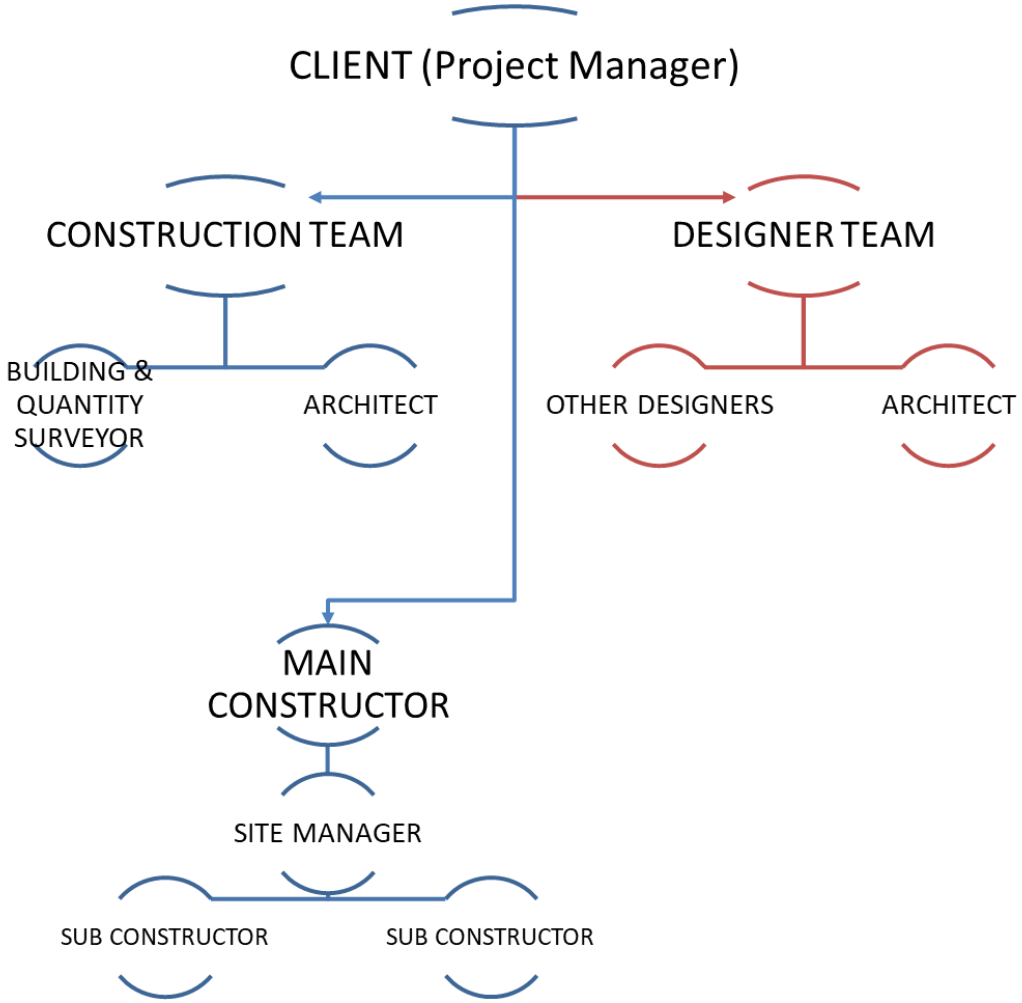
1 // The building team

The Construction team must be formed at least for an Architect and a Technical Architect by law, depend of the size of the project, will be more professionals. The Technical Architect assume the role of Quantity Surveyor, they must control the budget and check the Construction works, prices, measurements, invoices, etc… They have to sign many payment documents between client and construction firm.

Normally the client choose de Construction firm helped by the Construction team, and normally the Technical Architect, as QS, prepare a report about the different budgets from many firms, indicating which are the best option and why. They study not only the prices, they study other parameters as planning time, quality, experience, human resources, etc

SPAIN

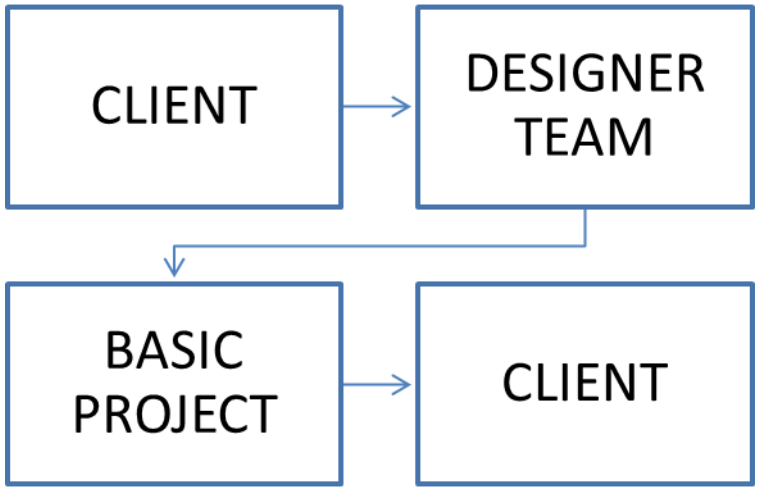
1 // The building team



SPAIN

2 // Schedule

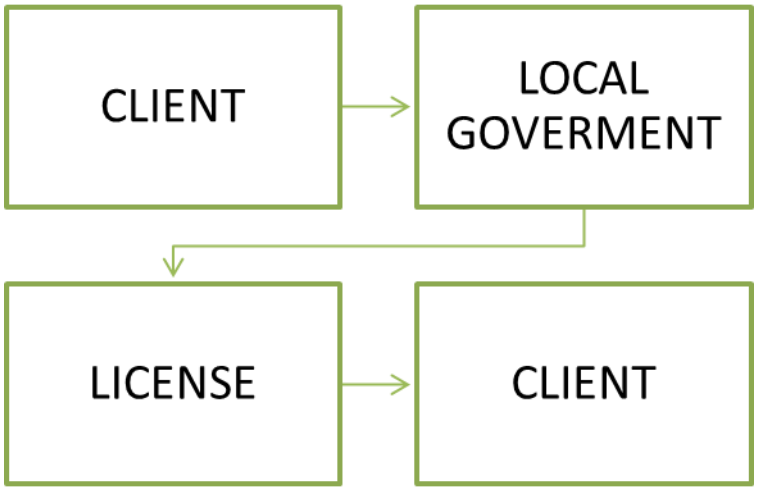
1. The design team, selected by the client, develop the basic architectural project. This type of project includes the architectural parameters and efficiency energy estimations, but it doesn't include a complete budget, facilities, structural calculates, etc…



SPAIN

2 // Schedule

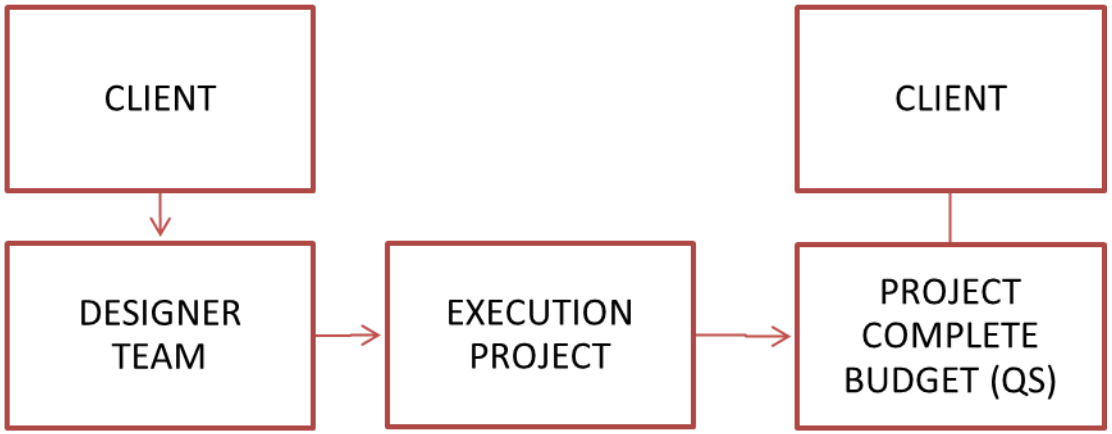
2. The client with the basic project ask the license for construction.



SPAIN

2 // Schedule

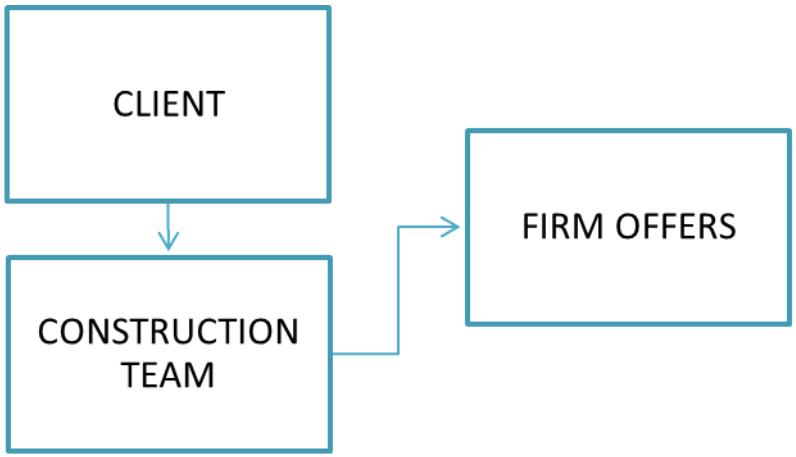
3. The design team develop the execution project with all the documents, including a budget developed by a QS.



SPAIN

2 // Schedule

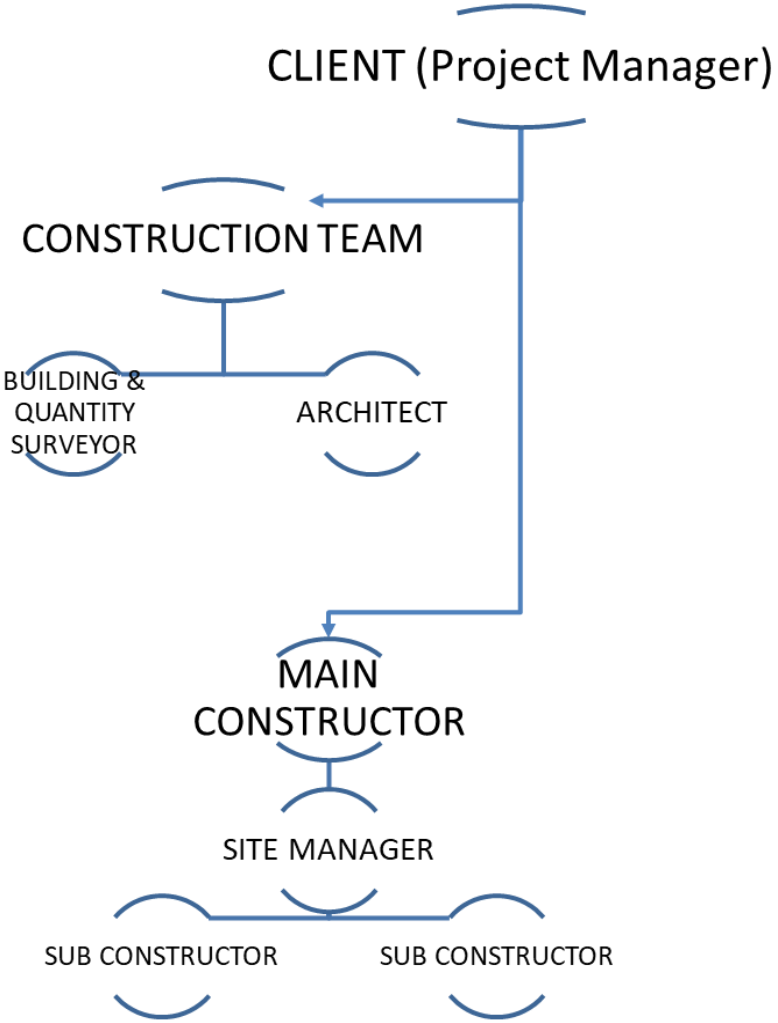
4. The client chooses the construction team, an Architect and a Technical Architect. (the technical architect assumes the role of building and quantity surveyor) and they ask budgets from different firms. The QS have to do a report about the offers and the client choose the construction firm.



SPAIN

2 // Schedule

5 - During the construction, the QS controls all economic and quality aspects, they have to measurement the works, check the invoices, etc…



SPAIN

2 // Schedule

6. At the end of the construction phase, the QS prepare and sign the final cost between the client and the firm, a final economic settlement

The Netherlands

From Erik SCHULTE FISCHEDICK

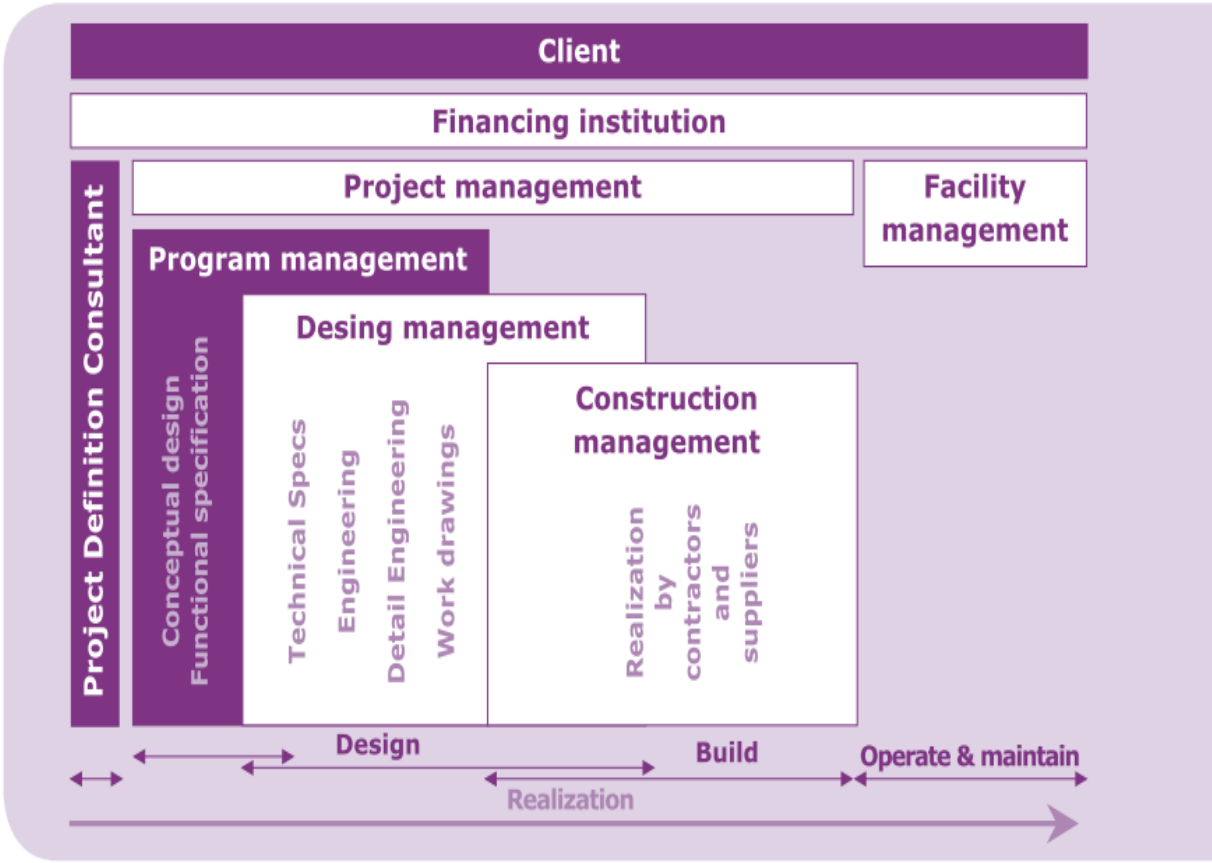
Board Member NVBK

Nederlandse Vereniging Bouw Kostendeskundigen

The Netherlands

1 // Two base schemes

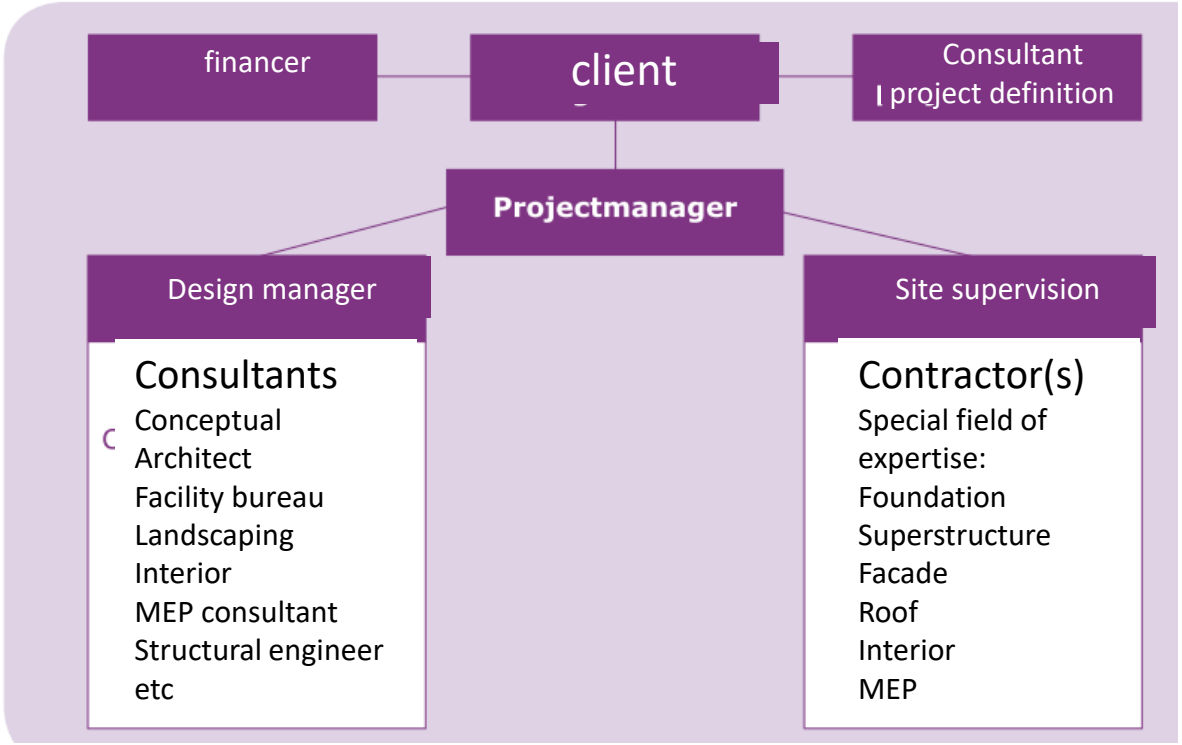
Purple blocks are the clients primary responsibility. He/she should be capable to define the economical and functional scope boundaries. In nearly all integrated processes the initiation phase or project definition phase is carried out by the help of consultants. They cannot have any future commercial concern/interest. At the clients side continuation of the consultants role is possible off course. Somewhere during the design process (so, between definition phase and shop-drawings) the hand-over of responsibilities takes place. This is the transition from consultants to the builders. The moment of handing-over the responsibilities determines the level of integration of the contract for the building phase.



Source: www.nlingenieurs.nl

The Netherlands

1 // Two base schemes



This is another representation of such a typical scheme.
The base for every building organisation is very traditional and involves 3 parties. Client, consultant and builder. If we add modern roles like financer and consulting roles (project manager, design manager and execution manager) to the classical scheme this scheme evolves. Based on this scheme many contract and process type can be structured.

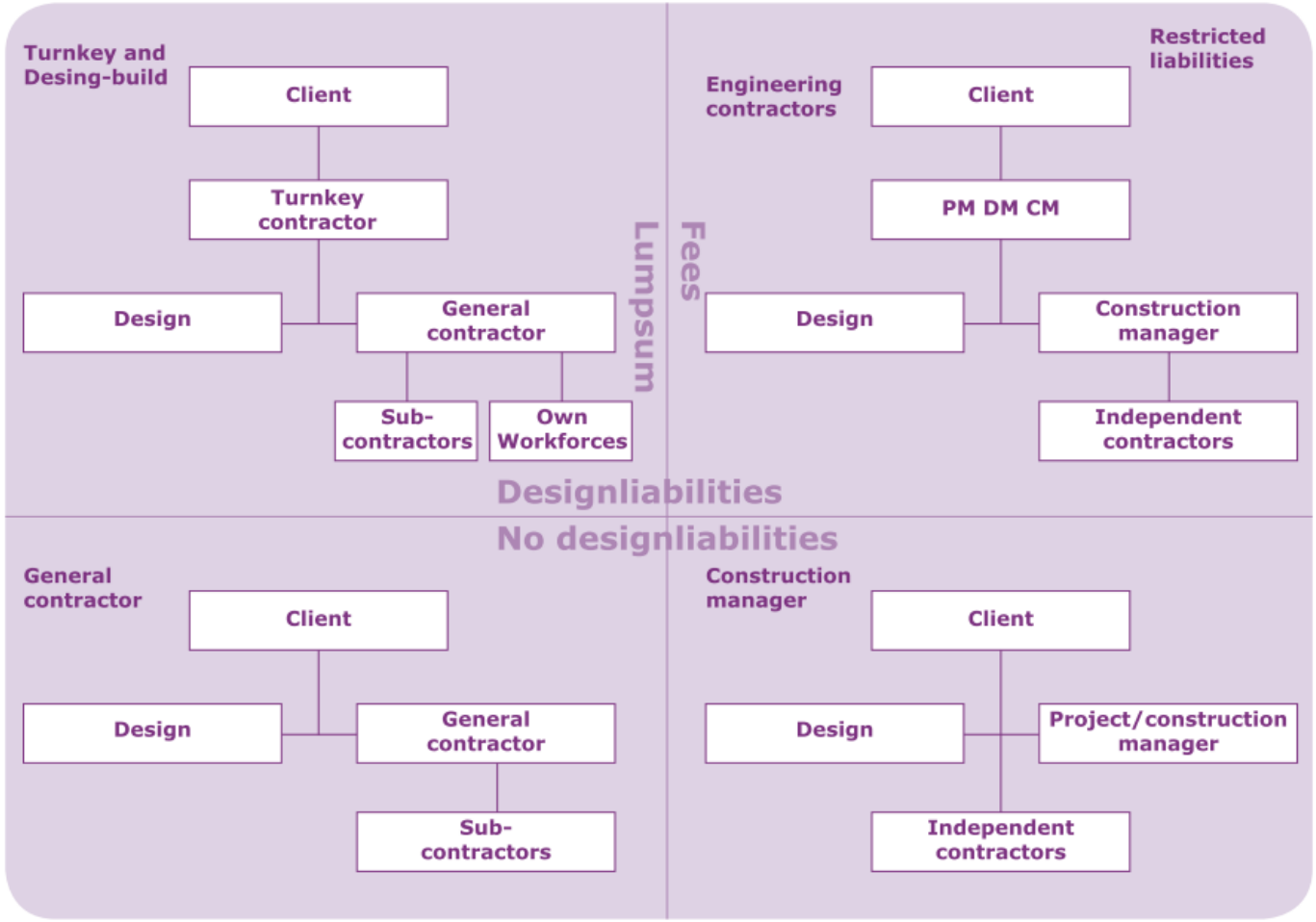
Any party (client, consultant, independent specialist or contractor) can be responsible for these roles: project management, design management and execution management. The acceptance of these responsibilities dictates the contract type.

Source: www.nlingenieurs.nl

The Netherlands

2 // Contract strategies and design liabilities

This scheme shows the most important decission models for the consultant.
The contract strategy impacts the liability. On the top left one can see a lumpsum or fixed amount versus the time-material type where all hours are multiplied by a fee. Another distinction can be made by design responsibility.



Source: www.nlingenieurs.nl

The Netherlands

3 // Main contract structure types

In the Netherlands we distinguish 5 main contract schemes.
The cost consultant is involved in all phases.

In the initiation phase a rough estimate will be made to decide go/no-go and/or a budget. Later at each design stage a cost estimate is created as a 'gate' getting more and more mature. The uncertainties and risk become less as the design evolves. Depending on the moment the building contractors place their bid, the cost consultant judges their offer and sometimes negotiate (depending on the contract type). Also during the project execution the cost consultant still is involved to judge additional work proposals. Sometimes if construction goes wrong (technical, timewise or financially) the cost consultant can also be hired by a court as independent consultant.

The Netherlands

3 // Main contract structure types

1. Financed integrated contracts
   Two parties: client and contractor. E.g. FBOOMT, BOOT, FBOT, DBFO, BFO, DBFM en DBM
2. Integrated building contracts
   two parties: main contracting, Turnkey Contracting, Engineering Procurement Contracting, Design & Construct, Detailed Design and Construct and Design & Build
3. Traditional contracts
   Three parties: client, design and execution phase.
4. Integrated engineering contracts
   Management Contracting, Construction Management, Total Engineering, Target Fee Contracting, Engineering Contracting and Professional Construction Consultant
5. Management contracts
   Architect, Structural engineer, specialized consultant, Project Manager, Design Manager, Construction Manager and Facility Manager (consultants)

The Netherlands

3 // Main contract structure types

The cost engineer may be spotted (at dawn ;-) in all organisations and during all project phases. Some of them are self-employed and operating as independent consultants, others are working at an engineering consultancy firm or at a building contractor. Large client organisations (governmental) also employ cost engineers, smaller clients normally hire cost engineers.

UNITED KINGDOM

From Steven THOMPSON

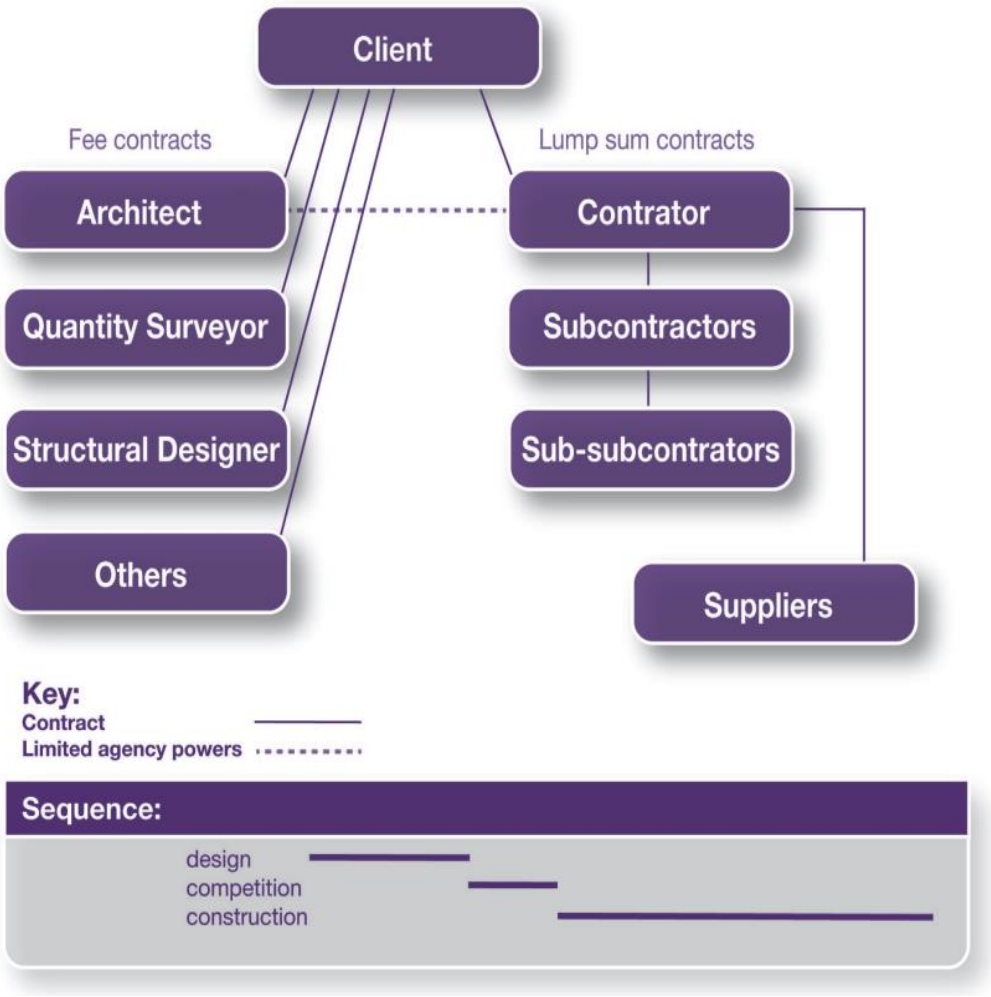
Royal Institution of Chartered Surveyors (RICS) – London

United Kingdom

1 // The building team

As well as an architect and a Quantity Surveyor (QS), there is likely to be a Project Manager (PM) appointed by the Client and this is likely to be the first appointment. The PM will then advise the Client as to the other consultant appointments necessary and may even be involved in the commercial discussions around their appointment.

The PM is likely to assist the Client is writing the Client Brief: 'what I want, and how it is going to be achieved' – but in 'broad brush' form. The architect then prepares an outline scheme design to align with the Brief and the QS will estimate the expected cost – this estimating is likely to include option appraisal, so as to guide the Client as to his strategic options available.



United Kingdom

Other consultants are then appointed, such as: structural engineer, services engineer, health & safety consultant and other specialist consultants and these all work as a team to design and supervise the construction of the building.

With a 'traditionally' procured project, the architect will remain in place throughout the whole project as the design team leader –
these roles might include:

- full design of the architectural elements and design co-ordination of the rest of the design overall; materials and workmanship specification in respect of the architectural elements;
- submission of the Planning consent application and dealing with the Planners over approval and/or Conditions imposed;
- assistance with the tender enquiry documents;
- upgrading of the design drawings and other information to 'construction' standard;
- preparing revised design information during the course of the site construction phase;
- inspecting the works throughout and at the end to ensure that the build complies with the design intent.

(The architect may (but not typically) also act as the Contract Administrator (CA) and issue instructions and certificates to the Contractor during the work on site).

United Kingdom

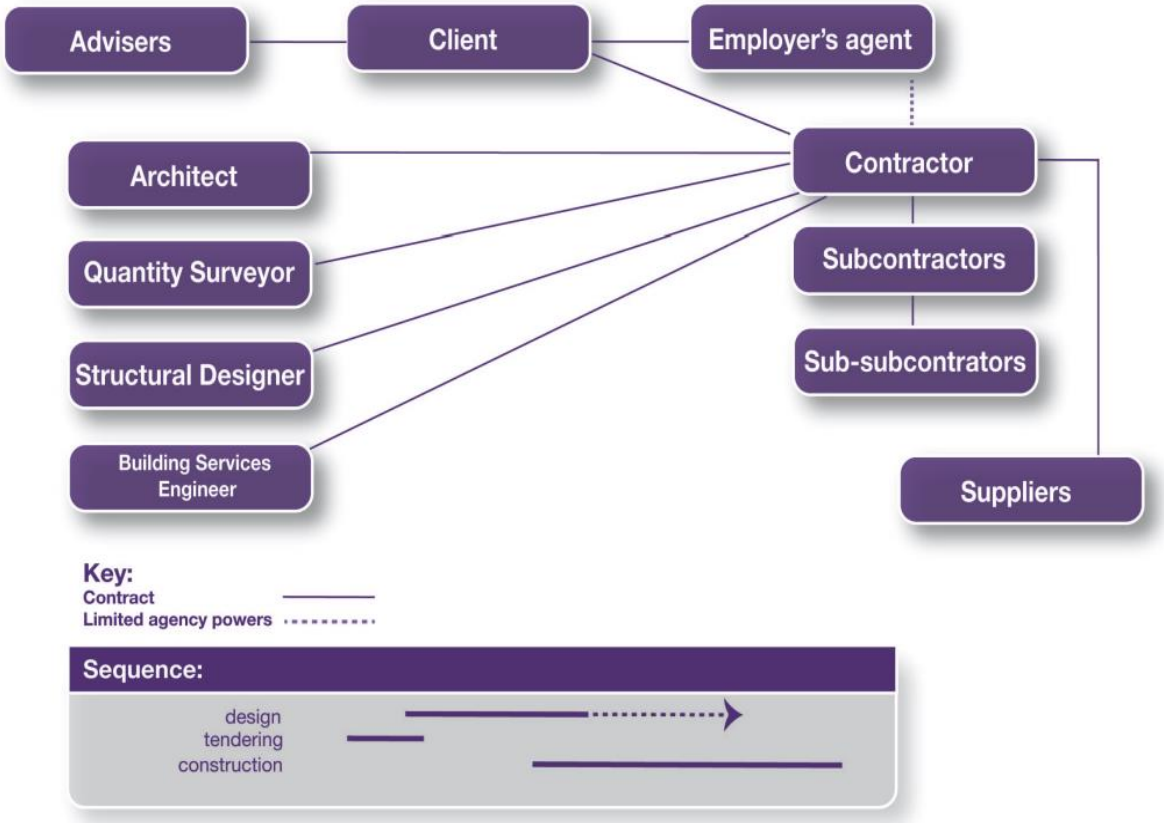
With the very common alternative of a 'design-and-build' procured project, the architect is unlikely to remain in place beyond the tender enquiry stage, as the successful Contractor takes over responsibility for the completion of the design. The Contractor may retain the services of the architect (for continuity) or the Client may require that the architect's appointment is 'transferred' to the Contractor (legally known as 'novation'). On some occasions, the architect may also continue to be retained by the Client to advise him.

With a 'traditionally' procured project, the QS will remain in place throughout the whole project as the lead consultant on cost management and cost advice to the Client. These roles might include (and in the case of every stage listed, the action or duty of the QS described here also includes the reporting of the same to the Client): cost estimating as the design develops; option appraisal; procurement strategy; tender enquiry preparation and managing the overall tender process; tender evaluation and recommendation to the Client; contract formulation; interim payment calculations; overall cost management; valuation and agreement of the cost of variations; claims management; agreement of the final account payable. (The QS may (quite typically) also act as the Contract Administrator (CA) and issue instructions and certificates to the Contractor during the work on site).

United Kingdom

Procurement strategy: design and build

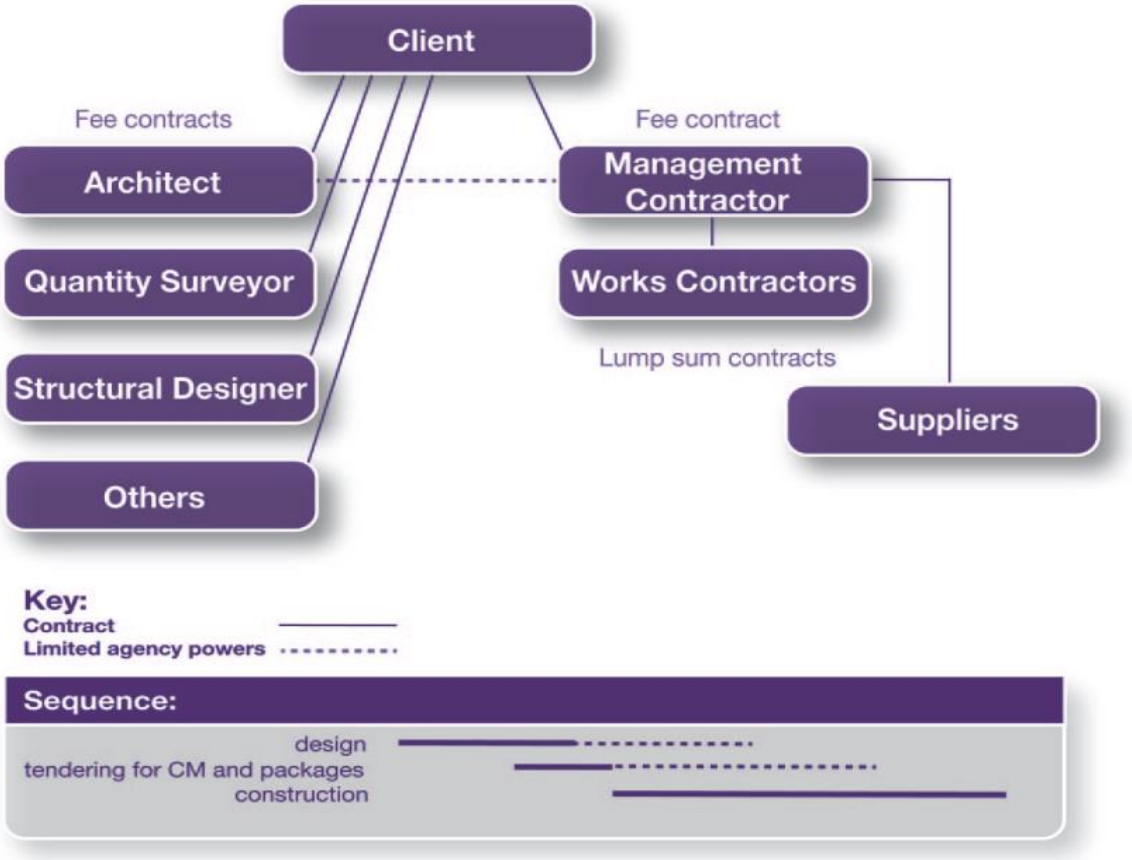
With a design-and-build project, the role of the QS is very similar to the last section and they will not ever be transferred (novated) to the successful Contractor, given that then Client will wish to continue to receive independent cost advice.



United Kingdom

Organisational structure of a management contract

There are many other variations to the two procurement models shown above which are used in the UK market to a lesser extent, where the architect and QS play slightly different roles, although the same base set of duties and services apply.



United Kingdom

2 // Schedule

Design phase

The outline scheme design (as originally prepared by the architect – and others) is developed to the point where the Client approves it, based upon the concept put forward and the estimated cost as prepared by the QS.

The architect then submits the scheme for Planning consent, which is dealt with at the local level by the Local Authority (Council). Different arrangements apply in the case of nationally significant infrastructure schemes and/or where the Planning proposal is likely to be contentious.

A refusal at Planning may result in changes to the design and/or an Appeal, at which point a nationally appointed Planning Inspection decides. Very high profile projects may go to a Public Enquiry.

United Kingdom

2 // Schedule

Design phase /b

Planning consent is likely to be granted with Conditions to be fulfilled which the architect is typically responsible for dealing with – some of which relate to the construction logistics and site based operations (noise, dust, working hours and the like).

Further design development takes place by the design team (led and coordinated by the architect) such that Building Regulations (design basis – national UK building code) approval can be obtained. Throughout this process, the QS is further refining the cost plan estimate and the PM is reporting both cost and programme implications to the Client.

On larger projects, the use of Building Informational Modelling (BIM) will be central to the design phase.

United Kingdom

2 // Schedule

Tender phase

Further design development takes place and at some point (and this stage is not necessarily a common point in time for all projects – see below) competitive construction tenders are invited (from contractors or constructors who should have been pre-qualified to be on the short-list for tender).

The QS takes the lead in coordinating the tender enquiry documents and includes the design team information together with general information about the site and the conditions under which the work is to executed and commercial details in respect of pricing and the form of contract to be used.

The tender enquiry is sent to a select list of contractors and the tender process is managed by the QS. Having received the tender offers, these are examined by the QS (and in conjunction with other members of the team) a conclusion and recommendation arrived at as to the appointment of the successful Contractor, as captured in a tender report. This is submitted to the Client for approval to proceed.

United Kingdom

2 // Schedule

Construction phase

After the agreement of the programme duration and the Contract Price, the successful Contractor is appointed and a start on site date agreed. The QS will usually be responsible for drawing up and obtaining the execution of the agreed construction contract. The Contractor may then be involved in the second part of the Building Regulations approval process – to confirm that what is built complies with the national building codes.

Work proceeds on site, with the PM having an overview role across the whole project and reporting on progress and cost status to the Client, the CA administering the terms of the construction contract the architect (and other members of the design team) dealing with design queries within their particular fields, the QS dealing with the financial aspects of the project, including the valuation of the work for interim (monthly) payments, the valuation of variations and claims, regular cost reporting to the Client (via the PM) and the agreement of the final account (the final cost of the works).

United Kingdom

2 // Schedule

Construction phase

Regular site progress meetings are held to review progress, to ensure that the quality of the work is maintained and complies with the design intent, to address queries and clarifications and to solve current and upcoming problems that have been encountered.

If the project programme is delayed, then the PM, CA and QS are typically involved in evaluating whether the Contractor is entitled to an extension of the programme duration and if so, by who much time and with what resultant cost impact.

At the completion of the project, a check is made by members of the design team that there are no outstanding defects which the Contractor will be required to rectify, after which Completion is awarded to him. A fixed period (typically twelve months) is then available to the Client to have any further defects that become apparent to be made good at no cost.

QS/EC competencies study in Europe

Thank You for your attention….