

on the relationship between quality, the system of awarding contracts and remuneration

Univ.-Prof. Dipl.-Ing. Hans Lechner

ECEC: European Council of Engineers Chambers

Bruxelles 20-11-2014

Hans Lechner

Univ.-Prof. Dipl.-Ing. Zivilingenieur + Architekt

Professor emeritus TU Graz Institute for Baubetrieb und Bauwirtschaft
 + Projektentwicklung und Projektmanagement
 8010 Graz, Lessingstraße 25/II
 Tel.: +43 (0) 316 873 6251 www bbw.tugraz.at



General Manager of Hans Lechner ZT GmbH
 1070 Wien, Lerchenfelder Straße 65
 Tel.: +43 (1) 521 50 www.hanslechner.at

publicly appointed expert on calculations ... project development, project management sv@hanslechner.at

GM of software | seminars | verlag | consulting | pmtools.eu
 1070 Wien, Schottenfeldgasse 49 www.pmtools.eu

about 40 seminars p.a.
 1 BPM course p.a.

about 50 prof. publications

Hans Lechner Architekten GmbH,
 D-80807 München, Leopoldstr. 244

FRA:GEN Generalsteuerung Realisierung
 focus-pm GmbH, Rödelheimer Bahnweg 21-23
 D-60489 Frankfurt am Main



- In Germany, the HOAI* and the VOB** represent a business model with some **formula-based effectiveness**, which makes it possible to build up **great trust** between clients and planners.
- These two systems, the HOAI as a scale of fees for architects and engineers and the VOB as a contract system for building services are fundamental for all construction projects in Germany and are widely accepted.

*) HOAI, fee structure for architects and engineers

**) VOB, contract procedures for construction works

- HOAI's paragraph 34 is describing the planning services required to design a building. They can be applied without any additional detailing to projects of all sizes and constellations, because it includes a well-functioning business organisation of all planning phases, describe short, but effective the results of what to do.
- The model character offers a kind of communication (coordination) standard to all partners in the design team, a standard with regard to effective organisation – and all this at comparatively low costs.
- It offers a well-known clear business model, because as you can imagine, in business unclear risks, **unclear models** must become **part of the price**.
- So well-balanced understanding between the contract partners – because they are using the same business model, helps reducing the costs of drawing-up and managing the contract.

- Until into the 18th century, building, as a form of settlement policy, was the responsibility of the state and/or the sovereign.
- The inspiration provided by the establishment of the German Empire, increasing privatisation and the rise of the middle class led to a first scale of fees for architects and engineers, the so-called “Hamburger Norm” in 1871.
- This voluntary regulation of fees eliminated internal price competition, in favour for quality planning services - that was understood in the same way throughout the country by both clients and tenderers.
- The idea was to transfer the "mythical" ethos of the Prussian public servant to the new free professions of architects and engineers, but with the same obligations concerning trusteeship of common and individual goods.
- The client was to have the same status as the prince before.

- The size of the fee obtainable according to the scale of fees was never directed at disadvantaging the client. The intention was that the fee should allow the planner to afford an adequate way of life, which should match that of a higher-level public servant.
- In 1937 and 1942 (due to wartime economy) the GOA (Gebührenordnung für Architekten) was expanded by the inclusion of a highest price rule.
- This was retained after 1945 and extended during the reconstruction period.
- The HOAI from 1977 is based on values that were calculated by analysing 900 projects in terms of the amount of work they required.
- In 2010-2012 the HOAI has been basically revised. The planning services have been adapted to actual planning and building routines, the fees have been adjusted to economic needs – according to an analyse by Prof. Schach.

- So, why should one use the HOAI for rewarding his planner?
To make a decision it is important to clarify those services that can and those that cannot be described:

- **Describable (planner) services** can be awarded
 - by means of price competition, but
 - as all the applicants must understand the task in the same way – because it can be described precisely – and,
 - by **optimising their means of production** the price can be used as an important criterion in awarding the contract (where the subject is exactly the same).

- **(planner) services that cannot be described** must be awarded
 - by means of negotiation,
 - as without discussion of the contents, the depth to which they should be dealt with, the approaches etc. the applicants **do not** understand the task in the same way or carry it out in the same manner, which would be necessary where the price to be used as the dominant criterion in making the choice.

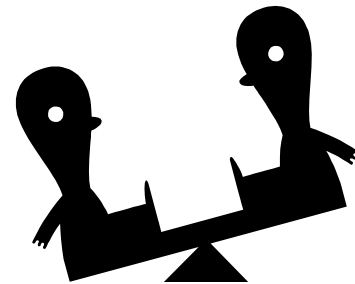
- From the client's point of view it is understandable that – as many services as possible – should be regarded as describable, because in this way public clients (often with the idea of saving taxpayers' money) can – as believed – purchase more cheaply.
- The disadvantage here is – if the service was not describable – that the quality and the content of whatever is delivered or performed is left up to the contractor or successful tenderer.
- Rejecting „lesser quality“ successfully will then only be possible if the requirements of client and project are clearly described in the contract.

- Consultants, lawyers and auditors say that only 60% of the hours they work are billable realistically.
- 40% of the hours they work are not billable and therefore cannot be charged for directly.
- To tell the truth, in planners' offices it's the same: 60:40.
- The 40 % non-billable hours include, for example:
 - entering competitions,
 - considering the possibilities of optimising specific project solutions,
 - researching specialized literature,
 - working on updating requirement profiles,
 - generating knowledge, storing knowledge for the purpose of internal quality improvement (further training) and quality management.
- So as a planner or consultant you need this 40% to improve and keep sustainable the other 60%.


- “Wise” clients are aware of this fact.
- Therefore, awarding contracts on the basis of a fee structure is in the interest of the client and the planner, as it allows this relationship, which makes sustainable work affordable.
- However - increasing pressure to use price competition as the basis for awarding contracts to planners produces the short-sighted advantage of "savings" of 20-30 % - related to the planner's fee.
- As a result savings have to be made too on side of the planners:
 - in the number of staff used,
 - in the involvement in trusteeship, and
 - in the intellectual resources urgently required for the projects quality.

- Regarded from a legal or business organisation viewpoint one may assume that all planning (and construction management) services should be allotted to the **client's sphere of influence.**
- From this perspective they are needed only to specify the initially unclear describability of the future building to such an extent, that the results in drawings and specifications will reach the level of describability that is needed for holding a price competition.
- Consistently, the discussion on procurement law begins from the standpoint that the major part of the planning services should be regarded as not clearly and not fully describable,
 - in terms of HOAI this are the phases LPH1-7 (of 9),
 - LPH.8+9 are the site supervision, the quality management on the side.
- This approach opens up the path towards negotiation procedures that is unique in european procurement law.

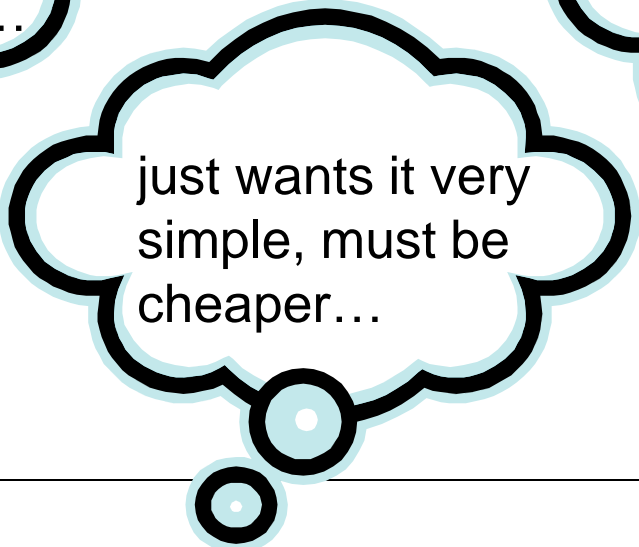
- So, assuming that planning services should be qualified as non-describable, another problem is arising: the double asymmetry.
- This means that **none of both partners** - client or contractor – can **know (and calculate) the future solution** before working together on a certain project.
- Unlike the purchase of ready-made products, the planner can provide his services only after "sale", after signing the contract, and only with the qualified collaboration of his client - and - in the later realisation stage - also with the qualified collaboration of the building contractor.




- The next asymmetry will be, that the client does not know beforehand what the planner will subsequently do – so a number of problems arise for the client:
 - if I don't know what he is going to do, then it is better to pay only half....
 - I want everything to be really simple and I will get to this just by paying less ...
 - if I can't tell apart the better from the good, then the cheapest may be good enough...



no idea what
he's going to do...



just wants it very
simple, must be
cheaper...



high quality? low
quality? let's take
the cheapest...

- But this **asymmetry of information*** also works in the opposite direction, **from client to planner...**
- ... causing real problems for architects and engineers:
 - Often, the client is not integrated enough in the project work,
 - when the contract is signed, the contractor (planner) does not know how the client will behave during project work,
 - switching between new ideas, sudden demands, threats of cancellation, and the use of inappropriate use of power may be jamming the project work,
 - and while obtaining information about the qualification of architects and engineers is regulated by the procurement law, there is no routine for evaluating future clients.
- However – the performance of the client will have a major impact on the planner's workload.

* based on Akerlof / Stiglitz ** Vergabeordnung für freiberufliche Leistungen

- For planners this could mean that earlier parameters used to determine the fee, namely
 - the fee zones, and
 - the chargeable production costs,

- must be augmented by **adding further parameters** that represent **significant cost factors** that have so far not been included in the calculation, like:
 - the complexity of the client's organisational system,
 - the complexity of the project organisation,
 - the special aspects of the project, e.g. the amount of building and special services,
 - working under strict deadline and / or cost limits,
 - dividing up services within the planning area,
 - all kinds of interruptions, delays, hindrances...

- The asymmetry of information also impacts from the client to the building contractors!
One of the reactions of the building industry to this situation is the **methodical selection of tender** in which "unpleasant" clients are just sent a polite refusal and will not get a tender.
- **Asymmetrical information – HOAI**
- Those who devised the HOAI thought about an "informed" client who would have the meanwhile rare competence to lead a building, planning and construction team.
- Under these premises the state was able to devise remuneration regulations (or "collective agreements") that are not only valid for public projects but also ensure consumer protection in the private sector.

- Two of the most popular buzzwords used by politicians are “consumer protection” and “competition”. This also applies for planner’s services. And so it is hardly surprising that a scale of fees is seen as a competitive disadvantage.
- It is therefore important to use these terms in a differentiated and strategically correct way.

- Each of these competition procedures has its own particular measures:
 - In the **price competition** figures generally suffice, as the value is an inherent part of the product or can be expressed in a calculable manner in the tender price. That means: products offered must be identical, the prices will differ. The quality of the product must have been precisely defined before the start of the competition, the products should/must be on the market to be compared as equal.

This allows tenderers to optimise their production means so that the **price, as the sole essential criterion for the awarding the contract**, leads to the decision.

- **Performance competition** means that not the price of the planning proposals will be compared, but their **quality**, which can be evaluated only by specialists. The price of the planning proposal, the overall price that can be forecasted, should all be integrated in the decision-making process. The price of the intellectual service must be the same for all competitors - in relation to the project costs - calculated on the basis of an objective instrument, for example the scales of fees.

Otherwise the tenderers cannot optimize the quality of the product.

- With regard to both these procedures, the conclusiveness lies in the avoidance of too many criteria: either “**price competition**” or “**performance competition**”.
A conclusive procedure can have only **one point of comparison**.
A mix would have negative effects on product quality, when there is no lowest price limit this can only be compensated by reducing the service.
- Planning quality arises through a sequential planning process in which the demands made on a building are worked through in a number of phases, repeatedly and in increasing detail.

Different tasks must be taken into account in each phase, focussing on the planning goal of providing a functional, economical and well-designed building. The planner is claimed to adopt a strategic approach, asking the right questions, examining the task at sufficient depth.

This evaluation will only work if he is given the economic basis to do so.

- Larger parts of the planner's services, such as intelligent tender documentation, well-considered awarding of contracts, consistent invoicing or representing the standpoint of the client, depend on sufficient fees for the planner.
- Many clients regard this with suspicion.
That a good part of a fee cannot be checked before the project does not match with the world of quarterly reports and constant efficiency of resources.
- With few exceptions saving has become today a kind of reflex.
Savings of 30 % in architects' fees reduces the overall cost of a building by 2 % but adds to the overall costs between 5-10 % - for additional contracts - for additional work, because the strength and resources to oppose such claims are missing.

- To give an example for the consequences of the price competition:
- In 1991 Austria left the path of legally binding fees.
- The price competition was introduced as quickly as possible into the field of specialist planning for building services.
- Today we can see that hardly any qualified building services (HVACR) office can be found for commissions above the level of housing/residential buildings.
- The result is extreme difficulty in carrying out complex projects, aggressive claims by the executing firms, and in the end the costs in carrying out the work often double.
- The use of price competition was leading to a clear reduction of quality.

- The planners in Austria could only envy their German fellows.

- Both – HOAI and VOB – are respecting the changeability of planning and construction by calling for draft variations of the design and by allowing the client to make alterations during construction.
- If the planning cannot be 100% complete by the time contracts are awarded, and as the client needs the freedom to make changes while processing the contract with the executing firms, this makes
 - the non-describability of planning all the easier to understand, and
 - it makes more clear that the bonds of trust between the description of services and their remuneration must have significant importance for both - client and planner,
 - and that the hypothesis of a price competition for planning services must be wrong.

- **So – where do the advantages / disadvantages of a scale of fees lie?**
- A scale of fees, regardless of for which profession, defines services and establishes a trustful relationship between service and price (client+tenderer).
- Such a regulation can never cover all possible cases, but it helps to reduce the diversity to the lowest common denominator.
- For the bulk of projects the resulting fee is a fair one.
At the extremes, both at the top and the bottom, distortions can occur.
- On looking at an architect's professional life
in the final costing of all the projects he has carried out,
one notes, that in each project the profit is different, or that in a number of
projects the fee received was inadequate and a loss resulted.
- In the ideal case, losses ought to be balanced by profits made in other projects,
which is a standard business practice.

▪ **Synthesis**

- In case where the planning business has not developed a comparable interactive business model, and clearly works with less depth,
 - Costs and profits of those executing the works clearly exceed comparable values in Germany,
 - The level of as-built quality declines considerably,
 - The overhead costs (of the general contractor), which amount to 20-35%, are noticeably higher than the planning costs according to HOAI, which are between 11 and 13 %.
- Partnership models (PPP*, GMP**) are pushed by the building industry to allow entry into projects at an earlier stage and to lay claim to and to have one's foot in the door of the design process at an earlier moment.
- It is said that the building industry should help the client to optimize his project, but – well - the purpose of a company is to optimize its own profit.

* Public Private Partnership ** Guaranteed Maximum Price

- The current financial crisis shows clearly that unregulated economy leads to extreme amplitudes.
- The model of the social market economy cultivated in Germany (and Austria) has always attempted to even out these amplitudes.
- In the context of such endeavours, the HOAI is a particularly successful example of how to regulate complex relationships between business partners.
- Particularly with regard to the VOB/C it was a guarantee for quality and sustainability of real estate business.
- The call for new regulating mechanisms for the finance market shows clearly where the chances for the HOAI as an instrument to establish trust could lie.

- We have to recognise that:
 - excessive economic liberalism does not have positive or sustainable effects in all areas,
 - preserving the value of real estate is an important factor for the stability of national wealth,
 - the creation of affordable residential and business spaces is still in public interest,and that
 - for this purpose, the trusteeship model of the HOAI produces better and more balanced results.
- So, survival, regular updating and further development of the HOAI is in the interest of the public good.

▶ further information

- downloads.verlag.pmttools.eu
- on the relationship between quality, the system of awarding contracts and remuneration
- über den Zusammenhang von Qualität, Vergabeart und Vergütung - das Geschäftsmodell für Planung, Objektüberwachung und Bau
- Schriftenreihe IBBW Nr. 26 ... full text in German