

Working with Architects in Spain

Foreword

Modern Villas was originally created in Marbella, Spain, by Belgian entrepreneur Philippe De Smedt and his wife Lu de Castro Costa Smedt (Brazilian, architect), to address the shortage of modern quality villas in the area.

Philippe first moved to Marbella in 1996, and later become strategic director of the then leading Dutch developer La Perla Living (La Heredia, Monte Mayor, NonSuch Bay Antigua).

From 2003 to 2013 he moved to Brazil, creating Brazil Estates; sourcing investment and development land for hotels, developers and institutional investors.

Modern Villas originally was created as a brokerage focused on Modern Villas, but soon specialized in architecture and project management, as local providers couldn't match the high demands of their mostly Belgian and Dutch clients.

The portfolio now includes dozens of the most exclusive luxury villas around the world and a client base that includes many Belgian and Dutch captains of industry.

Since 2016, Modern Villas went global and slowly transformed into an architectural power house, with architects around the world, and specializing in cross-border development of modern luxury villas.

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Working with architects



The role of architects in Spain

When you order a drink in a Spanish restaurant, you may have noticed how much work is split up over several employees. One person shows you to your table, another cleans the table, a third takes your order, and a fourth actually brings you the drinks. For the bill, a fifth one, the cashier, will print the bill and counts out the change. It's just the Spanish family way of doing things that somehow survived into the 21st century.

It is not surprising then, that building in Spain also involves a lot of different persons. Unlike other countries, where the architect takes care of virtually everything, in Spain each phase of the construction project has its own specialist. Architects, technical architects or aparejadores, combined in decision-making teams like *dirección facultativa*, *dirección de obras*...

Unfortunately, and especially for foreign clients, this succession of 'specialists' often creates unexpected problems - as no one seems to be really in charge when errors or miscommunications happen. We'll tell you how to avoid these problems - but let us explain first how the Spanish system works.

Phase 1: before construction

The architect handles the “design”

The architect, like in most countries, ‘designs’ your house according to your desires or “programme” and (at least in theory) your budget. He decides where to position the different “volumes” of the building on the plot, he designs the way the house should look from the outside (“volumetry”), the way rooms are laid out, the size and location of windows for light and ventilation and views.

“Architecture is like fashion: it’s all a matter of proportions”

Coco Chanel

For all this, your architect charges you a design fee; and the end result is a set of floor plans and views (“elevations”) of the four sides of the house. You also get a number of cross sections that allow builders to understand a little better how the structure and the floors are connected.

Often, he also adds a few 3D images. Those are generally done by specialized “architectural visualisation” artists or “archviz” artists. These artists know how to make almost any house look beautiful... Often their images are more beautiful than the house itself will ever be. These are expensive, so they are usually only done once you are well into the process.

The technical architect: “engineering” and costing

Once you’ve approved the general ‘look’ of your house, the architect passes the project on to a technical architect, either in house or independent. Sometimes clients have direct contact with him, sometimes not.

The technical architect (arquitecto técnico, or “aparejador”¹) has had a shorter, but slightly more technical training than the architect. He will elaborate the project in further detail, together with other specialists (structural engineers, electrical engineers, plumbing engineers, safety engineers, etc.)

He understands more about the technical aspects of construction and is more aware of the costs of different materials and solutions.

¹ An “aparejador” does the same thing as a technical architect but his studies were slightly different (they evolved over time), hence the different title.

Structural Engineering

An important part of that is of course the 'structural' plan - the collection of foundation, beams & pillars that will keep the house from collapsing. When architects design the house, they have a rough idea of where those pillars and beams will come - but still, often the need for additional pillars in awkward spots arises in this second phase. Or expensive workarounds are needed just because the architect wasn't aware of technical limitations.

How the foundation has to be built, depends enormously on the quality of the underground. So once the location of the house and the pool on the plot is decided, a geological survey is done (drilling pipes into the plot to see the composition and to find the layers with sufficient strength to support the foundation. With this analysis in hand, the structural engineer can then decide the most efficient foundation system.

This is a very important step, especially to find out if the house will require special (and expensive) "piling" foundation or whether a "normal" foundation near the surface will do. The cost impact of this can be enormous. For a mid sized villa, one can quickly spend €100k on something you'll never see again.

Installations: mechanical, engineering and plumbing (MEP)

Electricity and home automation plans, structural plans, heating/cooling, ventilation plans, solar heating systems, sanitary plans, workplace safety plans... .. all these installations have evolved into very complex technologies and the architects can only scratch the surface of all of them.

Hence, behind the scenes, architects and builders will rely on a dozen or so highly specialized engineers, who will prepare detailed plans of "their" part of the installation.

In most cases, these specific installations will also be subcontracted by the builder to specialized companies. And in many cases, these will offer the architect a "free" installation plan for their part of the job... and conflicts of interest may arise. That can go both ways: at the high end, the engineers may be tempted to over-specify everything - after all, this way their company makes more money.

Example: at this end, capacities for airco, heating, hot water may be ridiculously over specified. Home automation may come with expensive "legacy" systems like Lutron, Crestron, Vantage while newer wireless mesh technology can do this for a fraction of the cost. All these systems add to the maintenance costs of houses that often are unoccupied 90% of the time.

At the lower-middle end of the market, engineers may limit themselves to specify qualities that just match the Spanish regulations. These norms, are of course only the “minimum” qualities that the law allows.

Example: at this end, hot water capacity may be calculated on the “average” needs of a Spanish family but fail to take into account that four or eight golfers may all return from their game or the beach at the same time, all wanting a super-pressurized power shower at the same time. You’d better have a hot water tank and pressure pumps that can deal with this.

It is very important to really define what you need. Many of our clients build a house with 4 or 5 bedrooms that will sit empty 90% of the time; be used by the owners as a couple 9% of the time, and with all guest rooms occupied 1% of the time.

Design conflicts

Traditionally, all technical plans (structure, plumbing, electricity, heating, automation etc. etc.) are done by separate specialists, on separate plans. And because all of these engineers work independently, this creates a problem that frequently plagues Spanish construction: design conflicts.

Plumbing may be designed in places where they should cut through concrete beams... air conditioning ducts are designed in places where inbuilt ceiling spots should come... etc. etc.

The architects are supposed to “catch” these issues by putting the plans side by side; but frankly this is extremely difficult and in most cases conflicts are only discovered on the building site, when the foreman is looking at the plans in detail to see what exactly has to be built tomorrow.

Detail plans

The level of detail formally required for installation plans is quite low. A bathroom plan e.g. can just contain a few symbolic lines showing where hot and cold water connections for the sink should be provided.

This leaves it up to the plumber to decide how and where he cuts out the wall and puts his pipes; and the same for the electrician etc. (In reality, this cutting is often even subcontracted to even less schooled workers.)

Needless to say, by the time they're all finished, connections can be messy and far from optimal. You'd be surprised how often almost nothing solid is left of the thin wall between bedroom and bathroom!

A good technical architect will think through and visualise *all* connections, and decide the ideal path for everything, optimizing not only for cost but also for comfort. Whether your shower warms up immediately or not, whether you'll wake up your partner in the bedroom, or whether you'll hear the toilet being flushed in the living room: all this depends on correct "engineering" by the technical architects.

Therefore, for quality construction, the choice of technical architect is of the utmost importance. A mediocre one may simply "copy paste" existing plans to minimize time spent. A great one will work for many weeks on this and know how to be paid accordingly.

Bill of Quantities or "Mediciones"

Once all plans are produced, the technical architect enters all details of anything that will have to be built - in a special software program that generates extensive lists and quantity sheets of the materials, doors, windows used etc. etc.

Every single item is listed and costed; and the digital files created by this software allows the builders to add their material costs and labour costs to calculate their quote. Physically, the end result is a 50-100 pages book looking like an enormous spreadsheet, full of technical jargon... in Spanish. Totally intransparent for the client, so you can only hope the technical architect did a good job.

Unfortunately, the above procedure means that a lot of people only discover their house is over budget after they paid the architect and the technical architect... and have already fallen in love with the project or otherwise reached a "point of no return".

That often happens, as the architects tend to design a 'dream home' (and a marketing monument for themselves!) without really giving much thought to the actual construction cost... and the technical architect only elaborates the details so he can't be blamed either. In the initial, "creative" phase, clients tend to go overboard as well, and enjoy the fun of adding great features without knowing the cost.

Here too, the precision of these mediciones depends greatly on the quality of the technical architects. Garbage in, garbage out: if the technical plans are not precise enough, the bill of quantities won't be either.

All too often, entire parts are just copy/pasted from previous jobs; leaving it up to the electricians or plumbers to install things any way they see fit.

Imprecise mediciones are also... a bonanza for builders! When discrepancies are found, this will give the builder the chance to charge extra for the necessary modifications.

Vague mediciones are a surefire way to allow the builder to overcharge. In fact, many builders in Spain are happy to quote very low initial budgets, based on the knowledge that the mediciones generally are so vague and leaky that they'll have "carte blanche" to correct the price upwards later.

The health and safety architect

While we're at it: there is usually a third architect involved - one who does nothing but design the "security measures" that the builder will have to take during construction. It's worth mentioning because all too often this is a third fee to be paid after the architects and the technical architect's fee.

The architects' college

Before you can start building, the plans also have to be approved and stamped by the College of Architects. They are supposed to make sure that the architects & technical architects have made no mistakes or omissions, and a copy of the plans is filed with them for future reference. Once stamped by the College of Architects and filed with town hall, you can start building.

While this provides an additional degree of security, it also adds an additional layer of paperwork, fees and delays. Once approval from the college is obtained, you can submit the project to the town hall for approval. Note that modifications to the plans (due to changes, mistakes, demands by town hall or other authorities) each time require the plans to be submitted to the architect's college again.

Building licence costs

In many countries, building licences carry a small administrative cost. In Spain, however, building licences are a considerable part of the town's tax income - and they often add 3-5% to the building cost!

Phase 2: during construction

The importance of the technical architect

Once moving into the construction phase, most of the architect's work is done (and most of his fees are paid.) While the architect's focus was on "what" has to be built, the technical architect's focus is on "how" it has to be built.

As a consequence, the quality of the technical architect defines the quality of the construction you will achieve.

Officially, the construction process is overseen by a "triumvirate" of architect, technical architect, and security engineer (together known as "dirección de obra" or "dirección facultativa") that is responsible for the construction. Their intervention is registered with townhall and the architects' college, so as to leave a clear track of who is responsible.

For practical purposes, during construction, the technical architect becomes the crucial factor, as he is the one that sorts out any misunderstandings about the project with the builder.

He usually meets twice a month, on site, with the builder; so the builder can ask for any clarification needed on how exactly some things should be built; report problems, suggest alternatives etc. These meetings are formally documented and serve as the basis to solve any disputes later on.

The technical architect also prepares a roughly monthly "certification" of the work that has been done so far; and this is normally the basis for invoicing by the building company.

10-years insurance and the Technical Control

Developers are bound to give a 10-year structural guarantee - covered by an insurance company. These insurance companies also want to protect their interests, so they will insist that an outside Control Company (OCT - organismo de control tecnico) is appointed who will review that the (mainly structural) parts of the construction are well done.

If you are building for yourself ("auto-promoción") you can theoretically skip this obligation; but if you ever want to sell the house before the ten years are expired, it may be harder to sell the house - the notary will have to warn the buyer explicitly that there is no structural guarantee on the building. So in parallel with the townhall licencing process, you will have to appoint an OCT company and get the 10 year insurance. This insurance, too, may cost up to 3% of the build.

If mortgages and banks are involved

Banks do give mortgages for construction; but they won't generally look at anything until they've seen a building licence. Which means, you have to own the plot and pay for the architects and licences before you can go to the bank for financing.

With those elements in hand, banks can then adequately estimate the market value of the finished house, and the loan-to-value rate can then be based on the market value of the finished house - which generally makes it possible to finance the whole construction cost.

If you are taking out a loan, some banks (not all!) also want their finger in the pie and may insist on appointing an OCT (exterior quality control consultant) or even a project manager of their liking. Needless to say that these are all extra costs and all add to the delays.



The formal steps toward the building permit.

First step: proyecto basico (the “basic” project)

In the first step, the “proyecto basico” basically shows what the house will look like (floor plans, elevations, etc.) and this proyecto basico will be submitted to the town hall for approval. It shows “what” you are going to build, but not “how”.

But nothing can be submitted without the “stamp” of the College of Architects... who has to ensure that the architects have made no mistakes and that everything is designed according to good standards. This usually takes just a few weeks, of course there is a little fee to pay, and then the proyecto basico can go to the town hall.

In this stage, townhall basically checks if the project satisfies its own rules (edificabilidad, occupancy, etc.), and checks the built sizes to calculate the licence tax. In Spain, this is not just a little administrative charge - it is a real tax of a few percent that is based on the estimated build cost. The architect submits a build cost (usually using the *minimum* costs that the regional College of Architects allows.)

But if this is too low, the town hall can also assess its own value and levy taxes.

Town Hall will also check if the plot does have the necessary public services, and if there aren't any complications like protected trees or old riverbeds, etc. Depending on the number of such complications, your application may be handed inside the town hall from one specialist or “tecnico” to the next and it can take weeks, months, or more than a year to get your licence!

In some towns, one ‘tecnico’ reviews whether you complied with the building code, another one checks if the urban infrastructure (streets, electricity, sewerage) is present on the plot, a third one checks for protected trees etc. etc.

Second step: the proyecto de ejecución (execution project)

Once the “proyecto basico” is approved, one can submit the “execution project”: showing in detail “how” everything has to be built.

Architects that are sure of what they're doing often start on the more detailed execution project *while* the proyecto basico is being approved. This way, as soon as the “basico” is approved, they are ready to submit the “execution” project.

This execution project - again - must be stamped/approved by the College of Architects. Once that is done, the townhall approval can come really fast - as they just want to “file” the application and do not really need to review anything new - the details of the construction are not of interest of them as it is the architect (and the College of Architects) that are responsible for this.

For this reason, many towns allow the builder to get started as soon as the proyecto de ejecución is filed. The formal OK is then usually in before the groundworks and foundation are finished.

Often, architects will submit an execution project for approval just so the construction can get started; after all, it will take a few months just to do the earth movement, foundation and structure and many decisions (what floor tiles or windows you’ll use, where the bathtub will go) can still be decided later.

In this case, the architect will have to submit the modifications again (first to the college, then to the town hall). With good judgment this can be used to speed up the process; but be aware that at each step there are again administrative fees to be paid.

Note: it is important that all design decisions are made in the previous step (proyecto básico), when only the architect has to adapt the design. In this step, making changes generates extra costs and delays as all external projects (structural, electrical, plumbing etc.) will have to be redone. You can still decide on the materials, but should not change the design any more.

Third step: the mediciones (bill of quantities)

As the execution project now “visually” shows everything that has to be built in detail, it’s now time to translate these plans into a “bill of quantities”, a huge list of every single item that will go into the building and its cost.

This document, comparable to a large spreadsheet of maybe 100 pages, shows the precise quantities and specifications of anything that will be used to build this house. It is usually produced by the technical architect, using industry-specific software that is used by most builders and architects. Unfortunately, it’s only available in Spanish and can be very technical - but in a few hours your architect can take you through the document and tell you what is what.

This is the moment where - theoretically - you would also have to make your choices about the materials you will use - which floor tiles, windows, doors, etc. - to be able and calculate the final price.

This moment is often a bit confusing and scary - as there is a bit of a catch-22: it's hard to decide how much you can spend on each item unless you know what the total is; and it's impossible to calculate the total cost without knowing which materials are chosen.

So it takes a few iterations, a bit of trial and error. To start off, the "mediciones" usually get filled in with "standard" materials that a builder uses for a certain quality level. E.g., the mediciones may start with a "marble floor in formats of 80x80 with a sales price of €50/m²." The client can then look at a few materials around that price range, and have those input in the mediciones.

As soon as enough materials are filled in, the total end price starts to take shape and then it's a matter of making a few trade-offs to get to the budget you want. Maybe you'll go for the cheaper floor and have the beautiful thin-frame windows instead? Or keep the beautiful windows but reduce the budget for the landscaping?

Fourth step: the licencia de ocupación or "final licence"

Of course, at the end of the construction the town hall will also make sure that you have effectively built the house you were licenced for and not something much bigger or taller or different!

In some towns, inspectors may also come and inspect the build site during construction - and that may prevent builders from "preparing" for some of the tricks that are used to modify the house after the

Unfortunately, this can also take weeks or months to happen. Only when the final licence is in, the construction of the house can be legally added to the title deed of the plot and your property becomes "legally" a house.

Note: as seen above, many tricks can be used to "stay within the local rules" during construction, but to be prepared for easy modification/extension etc. after the final licence is obtained.

In most cases this does not create any problems - townhall inspectors know fully well what's going on but as long as there is "plausible deniability" they will close their eyes.

It remains a fact though, that this practice is not fully legal, and that such changes/extensions will never be reflected fully in your title deed. If you ever sell, some buyers may "ignore" the value of these extra features... but most of them will still look at the "real" side of things.

Who manages the architect?

As the Spanish process involves so many parties, each with their own agenda and priorities, it is often a nightmare for a foreigner to manage all this.

If errors are made or complications arise, who will find out who is the party responsible? And who will make them pay for the consequences? I for one would never want to spend one or two years of my life managing this nightmarish scenario!

For this very reason, for foreign buyers I often recommend not to try and hire your “own” architects but to work with fully integrated “design & build” companies: i.e. building companies that have their *own* architects, technical engineers etc. and give you a “one stop solution”. In this case, you get one contact person, one contract, and most importantly: one fixed price. Only *one* party is responsible for the end result specified in the contract.

Experienced design & build companies have a well oiled team where architects, technical architects and the building staff have short communication lines. They all know exactly what they can and cannot build at a given priceline, and most importantly: are all aligned to the same objectives. Their architects do not design things the builders have trouble building. Their technical architect is sitting just across the table. And most importantly: they have been working together for years, making communication and collaboration very efficient.

Even if they do make the occasional mistake (they’re human too): it’s not you, as the customer, but their boss that will end up paying for it. (But believe me, they make a lot less mistakes than the “loose” teams of architects, constructors and builders).

Who supervises the construction?

The role of an architect during construction is surprisingly limited in Spain, and most architects will pay hardly one visit a month to the building site. That is because they rely heavily on the technical architect or aparejador - who is more aware of building techniques and is the one that resolves most questions from the builder and supervises the correct execution.

And questions do arise, because most architects in Spain still work in 2D... Even if they correctly “visualized” the result in their mind’s eye, often the client didn’t, and as building progresses, changes often seem necessary.

And quite so often technical issues are only discovered during construction: toilet pipes or electricity lines that bump into concrete beams, pocket doors that should be sliding into the wall

but hit a column that was added by the structural engineer, windows that just show the wrong part of the view and need moving... etc. etc.

To solve this, there are weekly or fortnightly meetings between the builder and the technical architect, on-site, to resolve any major doubts the builder has. The architect may be present as well - legally, he is responsible for the job together with the technical architect - but often they leave everything up to the technical architect. More often than not, the architect will stop by the project only a handful of times during the whole construction process.

So mostly, ad-hoc decisions (like "I'll move this toilet a bit to the left so the waste pipe doesn't hit that column") often have to be made by the builder; for bigger decisions the technical architect will be consulted - and for the biggest ones, the architect.

But a lot is decided at a "lower" level and those decisions are often made in terms of building convenience rather than in terms of the most beautiful end result.. In between the weekly meetings, a lot of things get built that the technical architect never gets to see until it's too late.

The cost of making changes

Like in many industries - the *cost of making changes to a project is small at the beginning* but increases exponentially as work progresses!

At the beginning of the process, during the “basic project” phase, it’s fast, cheap, and easy to make design changes as only one person, the architect or his draftsman, is needed to make changes. Don’t be afraid of making dozens of iterations and changes in this phase, as this is where the design can get better and better - more beautiful, more practical, and more efficient to build - without having to spend any money.

In the second phase, the “execution project”, it’s still *possible* to make changes - but this starts to get unwanted side effects.

First of all, from now on, every change may require new structural calculations and plans, new electrical, plumbing and home automation plans etc. That costs time and money, and on top of that, the plans may have to be re-submitted to the architects’ association (fees! delays!) and town hall (fees! delays!). Also the bill of quantities will have to be adapted to reflect the changes made by all these separate engineers, and it is a logistical nightmare to keep all these changing information coordinated.

Second, as these changes are executed *separately* by different engineers, the chances of design “conflicts” increase and before you know, you have have pillars that interfere with electricity or sewerage lines. Often, such inconsistencies are only discovered during construction.

The big no-no: changes during construction

Now - I am a fierce enemy of changes during construction.

Changes during construction are guaranteed to create delays and budget overruns, and they create huge “opportunities” for the builders to come up with extra costs while it is never clear who exactly is responsible for that change (and the extra cost.)

Is it the architect who did not foresee this? The client who did not understand this? The technical architect who did not alert to this? It’s easy and unavoidable that fingers will be pointing in each and every direction.

But the materials have already been bought, getting a new one will cause delays and add to the costs, and the clock is ticking!

At the end of the day: the bill will always go to the client, who has to decide under pressure as the building can not be stopped and every day of delay costs extra!

In this 21st Century digital world, we can find no excuse for that. Everything and anything can be designed and visualized in 3D, so at least the architect should anticipate everything. Also the client can see the whole house inside and outside in high resolution full colour image even before it's built. What you see is what you get!

Once the building gets underway, nothing should be changed. Sure, you can still choose or change most materials, but don't "move" anything or it will cost you time, money and many a sleepless night.

Also: if you change nothing, you do not give the builders any excuse to come up with the infamous "extras".

Too often, this practice backfires in a later stage. If halfway through the construction, the builder discovers he isn't making any money at all, he'll use all kinds of tricks and arguments to save money or increase the price. This is where the infamous "extras" start appearing... all at once, dozens of 'unexpected' costs and supplements show up and the budget ends up increasing again.

Architectural design

Why good architecture is cheap

At the minimum level, an architect is a legal requirement and depending on the area, his fees may be 5 to 10% of the building costs, and to the client, that is always a lot of money, But a large part of this fee goes to a lot of specialized engineers, to the architect's professional liability insurance, etc., so the architect may be happy if he can keep 1 or 2% of this as his real income. That often isn't much money for a job that will cost them one or two months and will take one or two years to complete.

But good architecture can add much more value to the house than it costs. An amazing design can add 20, 30% (or more) to the value of a house while one or two "mistakes" (an awkward layout, a poor orientation, an impractical garage) often make a house virtually unsellable... unless at a steeply discounted price.

For this reason only, it's worth paying a few percent more for a 'good' architect than for an average one!

And... good architecture can also save costs! First of all, good architecture is designed "around" the particular shape, slopes and orientation of a plot; and finding the right shape can save tremendous amounts in construction. But all too often, mediocre architects try and drive "square pegs into round holes" - i.e. use a familiar design that is not really adapted to the plot, requiring tens if not hundreds of thousands of euros to be invested in retaining walls, platforms etc.

Also, dozens of design decisions affect the cost of construction. Irregular designs cost more than sleek ones. Rectangular designs cost more than square ones. West-facing designs require more covered terraces than east-facing ones. Corridors "cost" lots of doors and walls while eating away your living space that you can actually enjoy.

Strangely though, most Spanish architects just "design away" without realising the cost impact of their designs. It's not something they learn at school, it's not something they experience themselves (actually, the more expensive a villa becomes, the more they make.)

Also, designing a truly optimized design takes three or four times more time than just a "nice" design.

Frankly, with today's cutting edge technology we can design a good-looking house in just a few days, and at modern villas, we do that all the time. It takes 1% inspiration and 99% transpiration - but that transpiration can be left to high tech software.

At the same time it takes dozens and dozens of revisions to create a house that is a) good looking, b) has a good "flow" and feeling of space, and c) is optimized for easy construction!

For a traditional architect, it is simply not possible to spend months and months on optimizing a design for construction: he can not charge this time to this client, and he can not use the result for the next job. So unfortunately, in most cases design stops when the client's expectations are met... and then we'll find out what it costs later.

A taboo: economical and social ties to the local builders

It is unethical and confusing but it happens all the time: architects often do get kickbacks from the builders they are working with.

Most architects work locally or regionally, so they obviously end up "bonding" with certain partners - technical architects, building companies, installation companies etc. - which they have come to like and trust. It's only natural that they will favour these trusted partners over others; and even though architects may show you nice comparative tables showing the quotes of different builders and suppliers to give you a feeling of objectivity, in reality you're probably being played - you are getting kindly shepherded towards the partners they like best.

After all, (their) time is (their) money so they don't want the risk of having to deal with someone they don't trust.

So even if no money changes hands, this may prevent you from finding the cheapest and/or the best builders and subcontractors.

But... humans will be humans, and it is quite common that builders *do* give a kickback to the architects - and the monetary value of that can easily surpass the net income that they get from their architect's fees.

The trouble is not only that you're paying twice: the problem is that the architect then is "in the builder's pocket". If the builder then makes a mistake... say a floor is poorly laid and requires ripping out... it will be extremely hard for them to defend *your* interests and make the demands from the builder that need to be made; it will be much easier to gloss over these things and hope they get away with this.

But even if no money changes hands, especially as a foreigner you need to be aware of the social and economic ties that binds the local architects, technical architects, and construction companies together. They've studied together, live in the same town, and will do business

together dozens of times. You are only one client, and they probably make money off you only once.

It's only human that it's easier for an architect to disappoint you than to disappoint their local partners.

I'm almost afraid as I write this as sooner or later I'm bound to get sued by some college of architects!

My apologies to all the passionate, sincere and well-intentioned Spanish architects out there that do not condone such practices!!

Considerations about architecture for Spain

Popular features in modern houses

The “most wanted” features include large, sliding windows that can “open” the whole house up and create a seamless inside/outside living experience. Linked to this are large, covered terraces. Bear in mind that a terrace of 3m doesn’t necessarily give you 3m of shadow: the sun will shine “under” the terrace cover at an angle and in the morning or at the end of the afternoon you may get surprisingly little shadow.

A popular feature are also “double height” living rooms or entrances. They make the house “feel” and “look” bigger at little extra cost; creating extra “space” without using up extra m² of building allowance.

And of course, if well done, they can also be cooler as the hot air will rise up so it can stay cooler at the bottom. But depending on the orientation of the house, if they come with a double-height window, there is a serious risk of getting tóo much sunshine in the house, creating an overheated “glasshouse” effect.

In this case, overhanging covers (on both levels!) are at least some louvre system will be needed to keep the sun from heating up the interior in summer.

Large windows áre wonderful but only if combined with the right design and sufficient solar protection. Too many modern homes are poorly thought through and will end up being horribly hot solar ovens!

Orientation and solar protection.

Too often clients think that a “southern” orientation is ideal - to catch as much sun as possible - but that’s not necessarily true.

Indeed, at noon, the sun will be in the south - but because Spain is so far south, in summer it will be up so high in the sky that it doesn’t matter on what side of the house you sit: you’ll have sun everywhere.

It’s more important to realize where the *evening sun* will be... especially for those that will use their house in Spain mostly in the colder seasons to escape from the winter weather back home.. In winter, a house that’s oriented south-west or west will have the sun warming up the terrace (and the inside) of the house until the last possible moment, making outdoors living much more enjoyable than in other orientations.

Of course, in summer it means that the terrace can be pretty hot at the end of the afternoon - from 5 to 8 p.m. The air temperature is then at its highest, and on a west facing terrace, you’ll then get the sunrays right in front of you. After 8 p.m. of course things get nice again and it’s wonderful to enjoy the sunset right in front of your terrace.

East- or southeast facing homes will of course get a lot of sun in the morning (when it’s not so hot yet) while they will only get evening sun on the “side” of the house. This makes them cooler in summer, but often too “cold” in winter.

East-facing houses will need a lot less overhanging terraces to protect the interior from the sun... a west facing house is probably nicer but it is also going to require more covered terraces - and that will come at a cost. But these covered terraces are probably going to be the best spot of your house!

Note: modern software can visualize, minute by minute, how sun and shadow are going to “play” around your house at any given date of the year, and help us design exactly the right size of overhanging terraces!

Natural cross ventilation

Personally, having ten years of Brazil in my baggage, I'm also a fan of natural cross-ventilation which is a lot nicer than having to sit in a locked-up air conditioned box.

Natural cross ventilation requires that a house has generous air inlets that capture the wind from the front of the house... BUT the air can and will only come in if it can flow freely to the back end of the house and escape there. Preferably, the air inlets should be at a lower level to draw in cooler air; while the outlets should be at a higher level to evacuate the heated-up air.

If well done, this creates a natural "drag" - the so-called "stack" or "chimney effect" which creates a constant gentle "breeze" inside of the house - even if there is no outside wind. The feeling of this soft flow on the skin has a wonderful cooling effect and makes a house so much more enjoyable in summer.

Open staircases can help with this too and act as the central chimney. It can even draw cool air up from the cooler basement level.

It's an element of "passive" design - it will also reduce the capacity and the consumption of the air-conditioning you'll need!

In winter the outlets can be left closed so the warmth stays inside the house.

Dealing with heat

The heat you feel can be influenced by direct radiation, the surrounding air temperature and by the presence or absence of a cooling breeze.

If your house is exposed to direct sun *radiation* - think of the super-sized sliding windows that are so popular - you'll have to make sure that neither you nor the house interior is exposed directly. Large overhanging terraces work - but another, sometimes cheaper, option is to use vertical screens that provide (partial) shadow in the house while allowing you to look outside.

The advantage of screens is also that they can be moved - unlike covered terraces - and create more or less shadow depending on the season. They don't use up any "building volume" either.

Outside walls and flat roofs are exposed to this as well; hence the importance of having them well insulated so they don't heat up and convey all that heat inside.

The second element is *air temperature*. Throughout the day, the air temperature outside increases; and as you are likely to have all your doors and windows open, so will the air temperature inside! The important part is to make sure that the internal floors/walls don't heat up by direct sunshine. (In northern Europe, architects *seek* to have the sun warm up "heat storage" walls and floors to keep the house warm at night... here we're looking to avoid that!)

The third factor is *perception* - and this is greatly influenced by the perception of a cooling breeze. Cross-ventilation is paramount: this means that having large windows at the front is *not* sufficient. If the air can't get out in the back, it will simply not flow into the house (but rather be forced around it!)

With good design, cooler air (from shaded areas, water features, even basements) can be "pulled" into the house by the hotter, rising air that is exiting the house through strategically positioned windows at the *top* of the other side. This creates a natural "chimney" effect that can even create a gently "breeze" inside even on a day when there is no outside breeze at all. The breeze cools your skin and keeps the house enjoyable even on the hottest days.

Home automation vs internet of things

A revolution is under way in home automation. Only five years ago, only the top "home automation" brands like Lutron, Crestron, Vantage etc. could offer all the fancy tricks that makes a smart home smart; but they easily cost a hundred thousand euro (or much more). On top of that, each time something got mis-adjusted it took expensive engineering visits to get the system working again.

Newer systems use the "internet of things" to connect everything and anything via a simple app. Powerful brands like Samsung ("SmartThings"), Philips ("Hue") and even Google Home and Amazon's Alexa are creating powerful, stable and cheap solutions. Many do not depend on your home wifi - they have their own wireless "mesh" networks like Z-Wave (kind of like Sonos does for sound).

Today, for a few thousand euro these solutions can do anything the "legacy" home automation brands could do and more... plus you can easily program them yourself. Don't be misled by the poor "pioneering" products that were thrown on the market a few years ago... in just a few years, the technology has evolved tremendously.

For developers/investors a "big brand" home automation may still add value to luxury houses... but I think that in just a few years these legacy home automation brands will be obsolete. If you're building for yourself, look at the above solutions

Connection boxes

As Spanish walls aren't load-bearing, usually the electricians are left free to decide how and where they channel in the electrical wiring and tubes... Left to their own devices, they will install "connection boxes" of different size in random places in the walls... often creating real eyesores!! But it is so part of the tradition that even the most "modern" architects often fail to see this.

If you want to avoid these unsightly boxes, make sure that the architect defines where they should be put! They can usually be hidden behind a door, in a wardrobe or behind the bed headboard.

The whole idea of these connection boxes is that they facilitate "maintenance". But honestly, if all connections are made properly to start with, no maintenance should ever be necessary (or at least not the first 40 years.)

Building costs in Spain

Costs per square meter: not all square meters are equal

One of the first questions clients ask me is invariably: what is the cost per square meter of building in Spain?

I'll give you the answer in the next chapter, but I must warn you that this is probably the biggest source of misunderstanding, abuse and budget overruns in Spain.

Modern luxury villas have become technologically very complex things; and it makes about as much sense to use costs per square meter for a house as it makes sense for a luxury car. (I'll give you 10 reasons why it doesn't make sense, in a minute.)

First of all, one square meter in Spain is no bigger or smaller than anywhere else, but the definition is completely different.

In most northern/western/eastern European countries, it is common practice to count *indoor living space* only - the "noble" part of the house that includes living/dining rooms, kitchen, bedrooms and bathrooms. These are usually all "above ground"; the house may have a basement or not, but that is not usually included in the calculation.

Not so in Spain! Most developers, architects, agents and constructors will "include" a lot of square meters that are cheaper to build. Basements (whether finished or not), covered terraces, and even carports, pergolas and pool cabanas are all included in the "total build" number that is always advertised. (It's understandable, because you live 70% of the time outside.)

All too often the "650m²" house that a Spanish builder, architect or agent is talking about corresponds more to a "350m²" house in the eyes of an English or German buyer!

And of course, there are a lot of things to be built *around* a house in Spain that you aren't routinely built in our colder climates. Spanish villas may have hundreds of square meters of covered terraces, pergolas, poolside cabanas and outdoor kitchens. Sure, these are cheaper to build, but they do have a cost, and it does add up.

The tricky part is to understand the "balance" between noble/expensive "indoor living area" and cheaper basements. Spanish developers and architects often add as much "cheap" surface in the mix as possible, so they can sell a lot of "total" m²

In the example above, are we talking of a 350m² home that costs €2000/m² to build (i.e. €700k) or a 650m² home that costs “only” €1075/m²? If you use the €1075/m² as a cost estimate for your “350m²” house you’re in for a big surprise.

Note: developers and architects in some holiday markets are true masters at creating villas with a huge “size impact”: i.e. villas that look quite big on the outside, with (cheaper) terraces and pergolas stretching the visual perception of the house while the (more expensive) inside living areas are minimised. To some extent, that is justified (you’ll be living outdoors a lot of the time anyway), but it can be very misleading in terms of cost per m².

A second complication: outdoors living areas.

Swimming pools can range anywhere from 4x8m to 6*20, with or without a walk in “beach” area, with or without a jacuzzi, infinity or not, with or without heating. Whether you spend €30k or €80k or even €200k on all that will make a big difference in cost per square meter.

A third complication: non-construction items.

Builders and architects tend to quote prices for “construction”, conveniently forgetting to mention that kitchens, bathroom furniture, built-in wardrobes, landscaping, and the building permit (easily 5% of the budget) are not included. But whether you’ll invest €35k in a kitchen or €70k in a kitchen makes a difference of €100/m² for our 350m² house. (Or was it a 650m² house?) The same goes for landscaping, home automation.

A fourth complication: site works, retaining walls and foundations

In most of Europe, plots are flat and there will be limited costs to “prepare” it for building. But in Spain, steep plots may require expensive retaining walls, earth movement, and even depth foundations (piling) that can add €100k or even more to the bill, without any visible improvement to the house. (And much more for larger villas on larger plots!)

A fifth complication. high costs of building permits.

In Spain, this is not just an administrative fee - it is a real income generator for the local town halls. The cost depends, but you can easily spend 5% on the building permits alone (split over initial and final licence.) Was that included in the building cost they mentioned to you?

A fifth complication: architects fees.

Sure, the architect usually quotes up front what he will charge you, 5%, 8%, whatever. But sometimes they forget to tell you that you’ll also have to pay the technical architect (1.5 to

2.5%), oh... and the security project. Did I mention the fees for the OCT that the bank may require, or the cost of the 10-years insurance you will need if you want to sell the house?

A sixth complication: different assessment values.

Often people get misled by the different costs/m² that the architects' association or the local townhall uses for (tax) assessment purposes. These are generally on the low side, representing "average" qualities for the Spanish market.

A seventh complication: density.

Every house needs a certain "kit" of installations: one kitchen, heating/cooling systems, solar. Also bathrooms concentrate a lot of cost on just a few m². As a result, a 4 bedrooms house of 250m² (internal) will be more "expensive" per m² than a 4 bedroom house on 500m² internal living space.

An eight complication: local market pricing.

Most architects stick with "local" builders that may, or may not be cost efficient. In some high end locations like Marbella, costs simply are higher than elsewhere because everyone is used to it. As the selling prices per m² in these areas are exceptionally high, constructors have always been able to charge more and never felt the "need" to become more efficient. In other areas like Murcia or Alicante building costs are lower simply because the market demands it. Ibiza and Mallorca are 30-40% more expensive than average, and the "transport" cost of shipping materials to the islands cannot fully explain that difference!

Note: we often work with efficient builders from "cheaper" areas that we put to work in more "expensive" areas. Not only are they cheaper, they are often more efficient (read: faster and more quality).

Ninth complication: basements

In many cases, builders have to go down 2-3 meters below the top soil to find "solid" ground for the foundation; so if this area has to be excavated, and structure has to go up to the ground floor, then you've already "built" one third of the basement and it is relatively inexpensive to add some outside walls and a floor, and create an "unfinished" basement. Upgrading part of it for a storage, laundry, and technical rooms won't cost too much either.

But often, these "basements" can evolve into a real "third" level with extra guest rooms, bathrooms, gyms, sauna's etc. with their own airco, heating, home automation, sliding windows, terraces, etc. - i.e. with a level of installations that are almost at par with the ones "above ground". Needless to say, in this case the "basement" can be almost as expensive as the areas above ground

Tenth complication: modifications "after licence"

Throughout the book, I've mentioned dozens of tricks that people use to "prepare" for modifications and add-ons that can only be executed after the final occupation licence is given. But of course, this results in some double costs - as some parts have to be built in order to meet final inspection... to be broken out after that when works have to be restarted. Architects and builders know lots of tricks to minimise this cost but the more tricks you (need to) use, the more extra costs.

Costs per square meter: a better approach

Well, I owe you an answer to that question - but not yet. As the definition of "square meters" is so irrelevant, we simply refuse to make any "average" quotes for a "total" number of square meters.

Instead, we design a real project for a real plot, and our software allows us to easily measure the amount of m² that is going to be fully finished ("internal living area"), but also the amount of m² that is going to be covered terrace, vs open terraces, vs pergolas vs or pools, pathways etc.

We calculate the amount of basement that is unfinished, finished cheaply (garages, storage...) or finished to more complete specifications.

We calculate the (rough) amount of retaining walls that will be needed as well as perimeter walls.

We calculate the driveway that may be needed to access the underground garage and whether that will require retaining walls on one or both sides.

We then add a flat budgets for kitchens, wardrobes, landscaping, pool and licence.

For all these different types of areas, we know the normal construction costs of the different builders we work with, and the different quality specifications that they work with.

In our opinion, this is the only way to get to a close estimate of the real budget! Without studying the plot and making an actual project, you can quote any number but it simply means nothing.

I'll give you an answer anyway - but you are reminded to use this at your own risk and peril!

As a base for "normal" construction, like the one used in most apartment developments, most builders around Spain end up at building costs around €1100-1200/m² (and that is using the Spanish, all-inclusive way of counting the m²). Villas are usually built to higher specifications, and construction costs of €1500-2000/m² are common for markets where villas may be sold for

€1 or 2 million. True luxury villas with all gimmicks may cost €3000+/m² but of course the sky's the limit.

Quality-wise, the increase in quality that is possible with a little more budget is dramatic. That is because the first €1500/m² represent the basic “necessities” to have a house built at all... Whether you then add €300/m² for better finishes (=> €1800/m²) or add €600/m² (=> €2100/m²) will “double” the qualities you can get in terms of luxury floors, better painting, nicer bath tubs, kitchen appliances etc.

Note: remember that it's not as if you have to “double” the €1500/m² budget to €3000/m² to get a house that is twice as luxurious; and especially for bigger houses the cost shouldn't go up much. Although some luxury architects and builders would like you to think so.

The impact of design decisions

Many architects, unfortunately, have limited insight in the cost impact of their design decisions. That is partly due to the Spanish system, where the “creative” role of the architects is separated from the “technical” role of the technical architect.

But there is also a cultural element: until not so long ago, labour in Spain was very cheap, and the basic, Spanish-Andalucian style used nothing but cheap and simple materials.

When labour was cheap, it didn't cost much to make elaborate, ornate designs with lots of nooks and crannies.

But these days, Spanish labour isn't that cheap anymore, and modern villas are built with expensive materials that require much more careful planning.

But optimizing a design for cost takes much, much more time than it takes to just *make* the design... and it's often economically unfeasible for an architect to spend weeks on end puzzling out the most efficient way to build a house.

As I've been involved in building low-cost housing for the middle classes in Brazil, it's a passion of mine, and I'm tempted to write a few chapters about this. But I won't right now, as it might lead us into too much detail (and because it's part of our proprietary know-how that makes are designs more cost efficient to build.)

Suffice it to say, that 100m² of construction with the same floors, windows, doors etc. etc. can cost up to 30% more or less depending on the complexity vs efficiency of the design. A simple, balanced floor plan with an elegant flow will cost a lot less (and give you more space, light and a more harmonious feeling) than a complex, contrived floor plan. Stay away from the latter.

In closing

Architects have an exciting job - yet it is a game of many constraints!

On the one hand, architects have to create a house that has beautiful proportions, harmonious shapes... that must fit on a sometimes erratically shaped plot; optimize sun and view orientations for multiple parts of the house, while also respecting a maximum size and budget, and follow building regulations yet squeeze out as much value as possible.

On the other hand, they have to create an internal layout that works - that has all the rooms in the right place, with a natural flow between them, with the right sizes and views for all of them...

It's a lot like a Rubik's cube: dozens of criteria must be realized and optimally aligned. Yet you probably know how it is: just when you have all the "green and red fields nearly aligned, you make one more move to align the yellow fields... and all at once, there go the green fields again.

On another level... architects must be, on one hand, creative - but on the other hand, also show enough interest in construction cost and technologies to be able and keep budget and timing under control.

Too often, great architects become creative prima donnas who are designing wonderful monuments for their clients (and themselves), while failing to respect budget or timelines or in basic quality control.

More technically oriented architects, on the other hand, may realize perfectly executed buildings... yet without achieving the emotional (and financial) added value that great architecture adds to the equation.

The architect represents only a small fraction of the cost, and the difference between an expensive one, and a cheap one, is even less.

Yet the quality of the architect will define how enjoyable the house will be and your quality of living... while also adding to the market value of the house.

A beautifully designed house doesn't cost more than a poorly designed house (on the contrary!)... so choose carefully!!