



AUGI Design Academy 2008

AutoCAD Architecture 2009

Making AutoCAD Architecture Work

Paul Oakley

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Course Summary:

Many companies have purchased AutoCAD® Architecture, but few have successfully implemented the software to achieve the return on investment expected.

This session will take you through what needs to be resolved and the steps necessary to make AutoCAD Architecture work. How the software should be configured, how to implement standards and how to create a methodical approach to using the software that will make AutoCAD Architecture work over future releases. This session will give you the knowledge on how make AutoCAD Architecture work, provide the increased productivity. The return on investment that has been dreamed about until now, has alluded you.

Instructor:

Paul has over 20 years of AEC industry experience specialising in CAD management, implementation and Autodesk training. As vice chairman of the AUGI-UK Chapter and a qualified architect, Paul has assisted Autodesk in the development of AutoCAD Architecture. He has also been involved in various industry-led BIM initiatives and more recently Avanti. Paul is now an implementation specialist with UK based Cadpoint, an Autodesk Authorised Reseller and Training Centre. The company provides CAD consultancy services to clients ranging from small UK design companies to global architectural practices. Paul continues to present at major industry conferences throughout the world, providing industry professionals with guidance on improving efficiency, productivity and quality in the CAD arena



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Making AutoCAD Architecture Work

The Existing position

There are tens of thousand of seats of AutoCAD Architecture in use within the UK every day. But very few of these seats take advantage of the object technology and the capabilities available from the Architectural part of the software. Most just draw with lines, arcs and circles which they could do with AutoCAD Lt.

But why don't users take advantage of the power of the software that AutoCAD Architecture offers them?

What is the formula for making AutoCAD Architecture work and why did so many companies fail in successfully adopting it?

The Business case for Adopting AutoCAD Architecture

The ADT software was sold to hundreds of thousand of customer's world wide. Sitting on top of AutoCAD it provides all the functionality of full AutoCAD along with Architectural tools to increase productivity, reduce risk and liability. Being AutoCAD based it meant that the interface was familiar to the majority of the CAD Users in the Industry, making staff recruitment easy.

Most of the commands such as trim, extend, fillet etc work exactly the same using Architectural walls as traditional AutoCAD Lines. The software speeds up mundane tasks, along with providing fast and accurate scheduling. It was shown to be quick to produce 3D conceptual design as well as more complex geometry.

Whilst ADT could be used to produce a single building model, the parts of that model followed traditional AutoCAD methodology with files Xref together. It just provided tools to make it easier and remove some areas of user error.

Early adopters

The advantages of this method of working were obvious to all. The fact that if a design change such as a variation to a wall construction could be achieved in minutes instead of days was a "no brainer". Especially as the price difference between Full AutoCAD and ADT was minimal and with certain promotions was actually a cheaper solution. However, many companies purchased it on the basis that it didn't matter whether it worked or not. In many cases this was whilst the software was still young and had various bugs and glitches. It was often pitched as a 3D design solution that would resolve all your coordination issues, but you could always use it as AutoCAD. No specific UK content was available or agreed methods of working defined. If a company was going to be successful in implementing the ADT software then they would need to have staffs that were willing to learn and drive the software to make it work. Unfortunately there are only a few people with that willingness and skill set with in the industry.



The Ingredients to making AutoCAD Architecture Work

Having set the scene it is obvious that there are huge productivity gains to be had from using AutoCAD Architecture. But to actually make the software work requires many more things than just purchasing the software.

This session will look at the various ingredients that are necessary to carry out a successful AutoCAD Architecture implementation and how to make the software do the things that you purchased it for.

The ingredients that will be discussed are:

- Communication
- People
- CAD Standards
- Training
- Software Deployment
- Content Creation
- Deliverables
- Pilot Projects
- Climbing the ACA Ladder

These are complex ingredients and many of the issues discussed relate more to general “Change Management” and could apply for any software implementation. The key to these ingredients is communication.

Communication

To ensure that any project is successful there must be good communication. Every body must know what is going on, when, how and where. Also what is the purpose of what is happening? Why the company is moving to use AutoCAD Architecture and what is the strategy to make this happen. As with any “Design project” it makes sense to have a project programme, a clear brief and resources defined and to communicate these. This will help to get buy in from all members of the company.

Another reason for doing this include helping mitigate risk. By defining and communicating what is happening and when, it help others to make informed decisions about their own project programmes and ascertain where they may need to change specific deadlines etc. One specific example was a project team due to issue 400 planning drawing two days after a major CAD software upgrade. It was decided that the project should be printed three days earlier to ensure both deadlines were met.



People

Software is a tool and the tool is only as good as the people using it. In order to make AutoCAD Architecture Work you need to have people who are willing to make it work. This applies at all levels of the organisation. The failure at many companies is due to lack of support from high level management for those that are tasked with implementing object technology. There is going to be that period of pain whilst change is going on and staffs are learning new skills, accept it.

Many staffs are resistant to change. They don't see any direct benefit to themselves from implementing change. Having to learn about complex display representations, creating custom content and material definitions is beyond them. They get paid the same if they do one drawing or ten drawings a week. The main benefit is to the company. It is the company that will initially benefit if it manages to reduced risk and increased productivity.

Job Runners have project deadlines to hit. Many do not understand the differences between AutoCAD and AutoCAD Architecture. Their focus is set on delivering drawings that look a specific way on the date that they said it would be available. AutoCAD Architecture has many more capabilities than this, but a grate deal of time can be spent concentrating on quality of line work as opposed to delivered data. By changing the deliverables as discussed later on in this session Clients can actually receive more understandable data in both 2D and 3D formats.

In order to make AutoCAD Architecture work, senior management need to be aware of the software's capabilities and ensure that its use is driven through all levels of the company. There will be change and they need to give the person empowered with managing this change the support to be able to say "for now this line will have to remain as a 0.25 instead of a 0.18". The capability to put up with short term pain will be rewarded by long term gain.

The Average User

To increase a Users productivity and the quality of data to be produced all the tools that they require need to be available to them. It is fast and productive to draft with predefined wall styles, add windows and door styles from a project palette. Then select some predefined AEC dimension styles, generate some spaces, and change the room names from a selection list. A series of tags and schedule styles are also quickly inserted and the appropriate sheets generated, before duplicating and adding various display themes for specific graphic output. This is a fast, productive workflow and within the capabilities of the average user.

Then the project Architect says "Can you change that door to be a front faced sliding door. Also can this wall under the stairs be shown as a hidden line?"

What seems a simple request causes a major panic in the average user? The Door style doesn't exist and to change the wall is something to do with display reps, but they can't remember what.

So what do they do?





“Explode the AEC objects to lines and just change the line work in AutoCAD” and then print the drawings off. Because of two relatively simple changes suddenly all the powers of objects are lost, along with those productivity gains. When the drawing needs to be changed again this now creates further issues.

Unless all the components are available and easy to use the Average User is unlikely to create them. Even if they do have a go, the time it takes them to produce that new wall style means that all productivity is lost. Especially when two months later it is found that none of the walls are cleaning up correctly because wall priorities were incorrectly set and that they had just used the EndCaps from the original wall style they copied.

The Software Champion

Each company requires at least one person who is willing to go the extra mile to make AutoCAD Architecture work. They are the people who will resolve all those wall clean-ups that don't seem to work. They will keep banging their heads against the brick wall of EndCaps and even learns to drive home in an anti clockwise direction.

This is the person who respond to the doubters who say that you can't model a swan necked down pipe. They create an animated fly through from a sky full of clouds condensing into a water droplet of rain falling onto the building roof. Showing a torrent of water flowing along the classic profiled gutters and down the un-creatable swan necked down pipe, through the back inlet gully, proceeding on via drains and rivers until the water droplet finally finds its way back to the oceans and then evaporates back up into the clouds.

The software champion will prove that anything can be done in the software, given time and effort.

The Software pragmatist

As well as the software champion you also need the software pragmatist on the team who says “Don't model the downpipes the rainwater drainage as it is all being dealt with by subcontractors design and we need to remove all reference to RWPs from our drawing until it's resolved.”

AutoCAD Architecture provides many opportunities to increased productivity. However it is often the case that whilst 70% of the work is completed in 30% of the time the other 30% of the work takes 70% of the time. Here the pragmatist says we won't spend 3 days changing the display reps to make the model display correctly, we will just “Tipp-Ex” out the extra 3 lines that were created.

There is also a tendency when Users move into 3D modelling to model everything at a scale of 1 to 1. There are stories of Users inscribing the manufacturers name on an M8 bolt after modelling the threads. Key to a successful AutoCAD Architecture model is the level of detail to be provided. The amount of details placed into the styles will have a large impact on the software speed and functionality. The scheme should only be modelled to the scale of the G.A.s'.



CAD Standards

Built in CAD Standards

AutoCAD Architecture has built in CAD Standards that enable Users to follow the standards without having to think about them. When a wall is drawn it is automatically put on a wall layer. If the Layer doesn't exist then the wall layer will be automatically created based upon the current Layer standard settings.

When creating content for AutoCAD Architecture in its earlier form of ADT, it was common practice to place specific sub components of objects onto subcomponent Layers, such as wall Hatch layers etc.

As the content styles currently support 3 different UK layer and key layer standards, all subcomponents and hatching have been left on Layer 0, with a few exceptions. Other wise a complete set of content would be required for each Layer standard. Although this does not comply with previous recommended practice, it is the only viable option to support all standards. AutoCAD Architecture users can use display representations to control components, but this may be an issue when data is exported to an AutoCAD-only installation.

But what is a standard?

AutoCAD Architecture Standards are made up of the following parts:

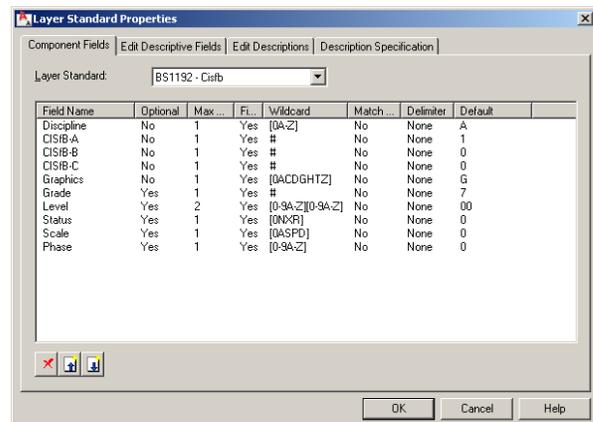
- Layer Standards
- Plot Styles
- Layer Keys
- Classifications
- Naming Conventions

Layer Standards

Layer Standards provide the ability to create a series of layers based upon a predefined hierarchy of fields that can either be optional or compulsory. Fields are defined with a maximum number of characters and specific data types.

This allows layers to be defined based upon specific standards incorporating classifications, such as CI/Sfb.

AutoCAD Architecture is supplied with 3 specific UK standards. These are:





BS1192 Cisfb

- This is the metric default layer standard, which is an updated version of BS1192 - Part 5 AUG Version 2 with CI/Sfb coding. This complies with the protocols of the CPIC Production Information Document guidelines.

BS1192 – Descriptive

The Descriptive version uses descriptive text as opposed to the CI/Sfb classification.

BS1192 – AUG Version 2

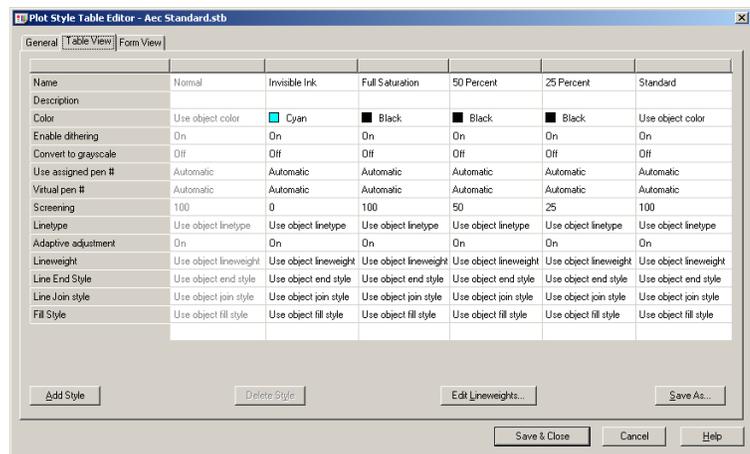
This is the early version of the standard with no specific mappings to a colour standard.

Pen Settings

As there is no British Standard relating to Pen weight \ Colour settings AutoCAD Architecture pen styles are based upon the North American Standards.

For CTB (Colour) base plotting the Tri Services Standard has been adopted. A PDF (Tri-Services Color Mappings.pdf) showing this standard exists in the AutoCAD Architecture Plot Styles folder as default.

For STB based plotting the AEC Standard has been adopted.



Aec Standard.STB

Layer Keys

Layer Key Styles define what object is drawn on what Layer. The Layer Key is mapped to a specific Layer defined in the Layer Standard. The Layer Key also includes the specific properties of that Layer such as colour, line type, line weight etc. When the appropriate object is drawn then the Layer is created based upon the settings in the Layer Key Style.

There are Layer Key styles to match the various Layer Standards. The default Layer Key style for the UK is the BS1192-Cisfb (256 Colors) style. The following highlights the advantages of using this Layer Key:

- Colours have been mapped to the Tri-Services standard for CTB plot styles.
- Line weights have been implemented in accordance with the Tri-Services Standard.
- Plot styles have been implemented in accordance with the AEC Standard.
- Unique names were created across layer keys, and layer properties were updated.
- Non standard Layers specific to AutoCAD Architecture have been prefixed with AEC.

Additional keys have been defined within the layer key style to allow for subcategories for the object types shown in the following table.





But I have my own standard...

Many companies have their own specific layer standard which generally consists of a layer naming convention and some predefined plot styles. They want to use their own standard. In order to plot a reasonable drawing from AutoCAD Architecture it is therefore necessary to go through all the content styles (i.e. walls, doors, window.) and set all the colours / plot styles for each component or material, for every display configuration. It will also be necessary to create or modify the layer standard and to redefine the entire layer Keys, including colour, line weight, line type etc to match their plot styles.

This process will need to be repeated for every release of AutoCAD Architecture, also whenever any content is brought in from outside sources or from another consultant drawing using standard AutoCAD Architecture objects. If a drawing has been accidentally started using non company styles and templates then all the styles will need to be reapplied and the layers updated for it to plot correctly.

Therefore if your own bespoke company standard is to be adopted there is a large overhead on the rollout of any release of AutoCAD Architecture. There is also the risk of ongoing support issues, as well as maintenance requirement on the bespoke content. Whilst it may seem a major task to change your companies CAD Standards and adopt the "out of the box" standards, it is a one off. It will be far more cost effective solution to change standard than recreate the content every release.

Display Configurations

AutoCAD Architecture is able to display objects with various levels of detail and these are controlled within the display configuration. Again it was common in the early releases of ADT for companies to customise the Display configurations to produce their own branded content. Again each release has presented subtle changes to the various display representation and maintaining these for each rollout has become a major chore.

There have also been issues where data has disappeared or changed etc due to display reps being set differently in different templates which cause issues when data is Xrefed together. Again by following the out of the box templates it is easier to maintain and managed the drawing data.

Training

The Training

Probably the most important ingredient in making AutoCAD Architecture work is training. UK Architects generally train for five years at a School of Architecture, plus two years practical experience in Industry. They are then expected to carry out 36 hours a year CPD to keep these skills up to date. Yet very few will have ever completed a three day Essentials AutoCAD Autodesk Authorised Training Course. Many will have used AutoCAD nearly every day of their working life and most could have saved themselves countless hours if they had received appropriate CAD Training.





Upgrade Training

Each release of AutoCAD and AutoCAD Architecture will increase productivity over the previous release. But only if staffs are trained how to take advantage of the new features and interface changes. Many companies will release each version of the software on to the desktop and just expect the Users to get on with it. The AutoCAD software still lets you work.

AutoCAD Architecture sits on top of AutoCAD. Much of the power of AutoCAD Architecture comes from the AutoCAD functionality. Many companies move from an earlier release of AutoCAD to AutoCAD Architecture and then only train Users on the Architectural object based functionality. To make full use of AutoCAD Architecture full training on the capabilities of both AutoCAD and AutoCAD Architecture should be undertaken.

ATC Based Training

The following is a list of the standard Autodesk Training Centre course that is relative to the use of AutoCAD Architecture. This may seem like a huge amount of training, but each of these course only provide time to quickly review each of the subjects undertaken. The courses are:-

- AutoCAD AutoCAD Essentials (3 Days)
- AutoCAD Intermediate (2 Days)
- AutoCAD Creating and Presenting 3D models (2 Days)
- AutoCAD Architecture Essentials (3 Days)
- AutoCAD Architecture Advanced (3 Days)

The fact that there are 13 days of ATC Training to cover up to advance User level for AutoCAD Architecture shows both the complexity of the software and probably the reason why few have mastered the software on their own.

Target the Appropriate Training

Training needs to be targeted to the appropriate people at the appropriate time. Certain members of staff will need to have a complete overview of the software capabilities to allow them to make decisions regarding which aspects should be used and how. Other will require specific high end training in say "content creation", as they will have a specific role to fill.

Training needs to be modular based covering the wide range of capabilities of AutoCAD Architecture. However, not all users need to know all these capabilities. Focussing the training to an individual's workload can ensure that they absorb the skills that they require and don't get overloaded or sidetracked by other features.

Training must be delivered in a series of ways. Essentials skills training will need to be supplemented with bespoke workflow training that may take the form of classroom training, seminars or workshops. This should be on an ongoing basis with the opportunity for staff to revisit areas in the form of CPD type seminars if required.



Content

Out of the box content

AutoCAD Architecture is supplied with various country content packs as an option when installing. One of these options is the UK Content that must also be installed along with the US Metric content. This is because the scheduling information is shared across both groups of content. The content supplied is unlikely to meet all your design needs and this should only be viewed as a framework upon which to create your own content. Included within the UK Content is a multi page DWF that allows the content to be printed out or viewed for the various display configurations available. The document called "AutoCAD Architecture 2009 (UK) Content.dwf" is available from the "Autodesk\ACD-A 2009\enu\Styles\UK" folder.

Additional Content

The creation of Content to a consistent format is paramount to the success of making AutoCAD Architecture Work. If the content is badly created this will create many drafting error reports with objects not clean up as expected. This in turn will reduce productivity as Users spend valuable time attempting to resolve the cleanups between various objects because a component priority has been wrongly set or a display configuration have been "tweaked" in one drawing to make it work. This usually creates further issues for a project where a more standardised approach is required.

Content should be created based upon the standard display configurations. When creating content all the various display configurations should be resolved, not just the one that is presently being reviewed or the task will escalate 10 fold when distributed across multiple drawing in multiple projects. At the beginning of a project stage the appropriate content requirements should be considered. For typical concept / outline planning type projects more generic content will be required. This should generally be made available from a company content library and the creation of this content should be part of the initial configuration / deployment stage.

Detailed planning / working drawings will require project specific content with more detailed component information. Again many of the typical content requirements should be included within the content library. But each project will have specific bespoke requirements and additional content will need to be created to meet these needs. This provides the opportunity to keep developing the content Library as project styles are developed. However, this requires that rigorous controls and methodologies are in place when creating content and only the advanced user or CAD Manager should be creating content.

Within the documentation available on the Autodesk website is the AutoCAD Architecture UK Content creation guide "acda2008content_w_appendix.pdf" which gives guidance on creating the appropriate type of objects.



Deliverables

Deliver more understandable data

As previously discussed AutoCAD Architecture provides the capabilities to improve drafting using objects. But each object can also hold property set data which can also be delivered in various ways. The ability to produce schedules quickly and efficiently is one of AutoCAD Architecture most important features. Schedule as exports to Microsoft excel are an obvious deliverables. But as well as showing that information in a spreadsheet this data can be shown graphically by the use of display themes. Various coloured plans can be produced in minutes showing fire rating, wall type, space usage etc.

Presenting Information

As the requirement for more sustainable design is driven there is also the push for delivering data in a more sustainable format. The use of DWF for both 2D and 3D deliverables provide a fast and economic solution to this problem. The viewer is free from the Autodesk website and is available to all. 3D models can be spun around, walked through, live sectioned and even individual objects hidden from view if required.

It is a highly compressed file format reducing storage requirements and the viewers can be customised with workspace similar to AutoCAD Architecture. It is therefore possible to deliver the equivalent of a PowerPoint presentation using the DWF format along with your 3D models and drawings. Images can also be added and as there is also a free DWF printer option from Autodesk almost any windows software can be used to create a DWF file.

If the other members of the team are not so sustainable, it is possible to print the DWFs to any printer / plotter without the requirements for special plot settings files etc. One single DWF file can be used to save a planning application or even a set of tender documentation.

The 3D DWF provides the opportunity for the Client to explore your 3D designs in their own time



Software Deployment

Deploying the latest Version

Autodesk are committed to annual software releases and many companies are under Autodesk subscription package. Each release of the software offers additional functionality and performance improvements over the last. It therefore makes sense to deploy the software on an annual basis to take advantage of these capabilities. However, I am not advocating deploying the latest version across the office as soon as that new DVD arrives in the spring. No wait for the autumn, when the trees lose their leaves and the various Autodesk service packs appear on their web site.

Making Use of Software Deployments

Each software deployment provides the opportunity to improve the productivity of the Users, whether this is by simply training Users on old functionality or the inclusion of custom developed tools. Typical areas that should be reviewed for each release are:

- Updated CAD Standards
- Improved Content Library
- Custom routines
- Improved Template files
- Improved Project Templates
- Improved Sheets Sets
- Improved working methodology

Software Deployments provide a great opportunity to enhance your Company CAD Standards and take advantage of the functionality provided within the software. A typical subject for ACA2009 is the functionality provide by annotation scaling. This provides additional functionality and improved presentation over previous releases. However, with requirements for defined standards, specific annotative content, training and methodology the feature could actually create both risk and reduce productivity if not deployed correctly. It is therefore important that the capabilities and issues relating to each release are fully understood.

Using Workspaces

The art of creating a successful deployment is providing the tools to support a major change within the software tool that staffs use on a daily basis. There are several approaches to this. Some prefer the "Shock, get use to it" approach. They attempt to force the users to self learn how the update interface works by making it as different as possible to there existing version.

Workspaces allow a method of customising the interface as required. I generally prefer to provide as similar an interface as close as possible to the previous version for the default workspace. Opening the software is then not a huge culture shock to the Users. Additional AutoCAD Architecture workspaces will be included within the deployment and staff can adopt these after suitable training has occurred.





The Pilot Project

Defining a Pilot Project

I would recommend that a pilot project is carried out for every deployment release of AutoCAD Architecture to test the various aspects of the software deployment.

It is unrealistic to attempt a complex project with various unresolved design issues, a short deadline, an under resourced and untrained project team and expect the software to resolve all their problems. A good pilot project will be suitable for approx 6 Users to carry out in an approximate two month programme. The project will include a lot of repetition, a known design type, an understanding Client and a flexible project timetable. The project itself should be typical of the type of work that is carried out by a company.

The purpose of the Pilot Project

The purpose of the Pilot project should be used to test to destruction all aspects of the software deployment, staff skills, training requirements and project deliverables. This project should define the basis to establish the best processes and protocols that will then be delivered globally.

It is often stated that "we learn from our mistakes". The Pilot project is the opportunity for those mistakes to happen, be found and then corrected before software is deployed globally and the mistakes increase to expediential levels.

This should not be seen as a project to test the speed and productivity of the software, quite the opposite. This should be seen to establish the principles of change management and enable the lessons to be learnt.

The Pilot Project Team

Choosing the correct project team to carry out the pilot project is another important factor. The members of the team should be considered carefully as creating the correct team dynamics with the appropriate differing skill sets and experience is also very important.

These team members are going to promote the success or failure of the pilot project to the rest of the company, whether you want them to or not. There is a requirement for one or two A list CAD users to be members of this team, but the rest of the team should be made up of lower skilled users who are willing to adopt new technology and working methodologies.

All members of the team should be aware that they are system testing and should document all issues as they arise, whether with the software, the content or the working methodology. Communication is important throughout this process and the team members need to be able to communicate successfully and regular team meetings are important.



Support and consultancy

If this is your first AutoCAD Architecture project or you do not have available internal resources with the correct skill sets then it is worthwhile investing in some consultancy from an Autodesk Reseller to support this process.

Having already learnt from a certain amount of "past mistakes" the consultant should be able to pre-empt many of the issues that will arise. However, choose the consultant carefully as you don't want to be paying to train a consultant, who is "learning on the job".

The Areas to be tested

The pilot project should test all the areas that are required to make AutoCAD Architecture work. The sorts of questions that need to be addressed before releasing the software across the company are:

The software builds.

- Is the software stable?
- Is the hardware capable of running it?
- Will the new deployment at least allow staff to continue working with minimal training?

Cad Standards

- Do the templates have all the correct components?
- Do the drawings all plot correctly?
- Are the standards easy to use?
- Is there any issues relating to existing / old data?
- Do the standards work when importing external consultants data?

Content

- Is the content suitable for general work?
- Are there specific areas of content that need to be established?

Training

- Did the initial project staff training meet the needs of the project team?
- How can the training be more efficiently delivered?

Support

- What are the main support issues?
- Is support quickly available?

Deliverables

- What can be created quickly and efficiently?
- What were the main issues?

Ensure that all these issues are resolved or a work around is known before deploying the software across the company.



Climbing the ACA Ladder

ACA Capabilities

The capabilities of AutoCAD Architecture can be broken down into specific areas which generally relate to specific design stages or tasks. These are:

- Project Navigator (Drawing Management and delivery)
- Mass Modelling (Conceptual Design)
- Drafting with objects (G.A.s')
- Scheduling
- Building Modelling
- Callouts (Sections and Elevations)
- Aec Detailing
- Presentation Techniques

In an ideal world the new ACA User would start on the first rung of the ladder by learning Project Navigator and put together a concept model and schedule off the floor areas. This concept would then be converted into walls, doors and windows etc. Sections and Elevations would be cut from the model along with detail callouts which are then embellished with further AEC detailing components. The drawing sheets, schedules are then added before display themes and visual styles are used to enhance the sheets which are then published via the project navigator sheet sets. There is one single data stream from "concept" to "as built" at the top of the ladder.

In reality areas such as Concept design models tend to be created by specific people within a practice who specialise in this area. Many Architectural practices are broken down into design teams and working drawing teams. Some practices even just specialise in specific areas of the design process such as planning and would never carry out the working drawings. Therefore the skill sets and requirements from the AutoCAD Architecture software are different for each. So where do we start.

We need to highlight specific tasks and define a suitable workflow to increase productivity and automate any of the mundane tasks whilst removing areas of risk. The appropriate content, configuration and training needs to be in place to support that workflow to ensure that the users will be successful in using this workflow.

Conceptual Design

The mass modelling feature of AutoCAD Architecture, specifically when used with the new AutoCAD modelling capabilities provide a powerful array of commands to model most shapes. The ability to create various mass shapes, slice these into levels and then create areas schedules to quickly generate the analysis is a simple workflow. But it requires the correct tools to be in place and the staff to have been trained on how to access and use them.



Whilst the majority of this skill set is specific to conceptual design the skill set is also the same for creating complex geometry for bespoke component modelling. The skills learnt for one aspect of the design can be passed on when required further down stream.

Productivity

The reason that many invested in AutoCAD Architecture was because of increased productivity. Many were then lured into the world of 3D design and spent days creating renders of a damp proof detail before dropping it because they could get the sunlight to reflect off the bitumen welt.

So let's get back to basics.

Drafting with walls, doors and windows will immediately increase productivity with minimal training. The requirement is that there is a suitable content library of components for staff to work with. A defined process needs to be in place for creating bespoke content to be added to the library, but the Users should just place some generic content as a placeholder in the mean time. The users should not be attempting to resolve the 3D issues at this stage but just concentrating on quick creation of GA's. Initially this should concentrate on planning stages as the presentation display configuration will hide any clean up issues.

Scheduling is another major productivity gain for AutoCAD Architecture users. This inclusion of space objects within a GA will immediately allow the capabilities of area schedules to come into play. However, the out of the box content is unlikely to meet your scheduling requirements. But by having your own predefined space styles, property sets, tags and schedule styles a series of space analysis drawings can be quickly created and schedule data provided in the required format. Doors and window schedules are another quick win, as long as the styles exist and the correct data has been entered either within the object styles or when adding the objects.

AEC Detailing

There is a large selection of 2d detailing components that are available for use within AutoCAD Architecture. The UK content all has NBS references that can speed up keynoting etc. Very few users take advantage of the capabilities of AEC detailing or keynoting. Again this part of the software can be configured to meet bespoke requirements and both detailing and component libraries can be centralised and expanded to meet your companies' project needs.

Project Navigator

There are many advantages to using Project Navigator within AutoCAD Architecture. However, like many of the ACA features this needs to be configured to make it work and that configuration requires a specific level of knowledge. Whilst using construct and elements will aid in reducing risk, as XREFs are managed for you, the main productivity gains are from publishing and the E-transmit tool.

Again here the productivity gains are made from correct configuration, along with a defined methodology, that allows the users to take advantage of the power of the ACA software.



Snakes and Ladders

Whilst AutoCAD Architecture can work at many levels the majority of Users cannot. If Users are presented with training on all aspects of AutoCAD Architecture then they will not remember the sections specific to their everyday job and slide back down to basic AutoCAD. It therefore makes sense to focus on specific workflows that are relevant to Users to help them complete their every day jobs. Content needs to be provided to support these workflows and the training geared to the specific tasks.

Instead of climbing a ladder one rung at a time is more a case of snakes and ladders where you may find yourself jumping to specific areas where there are tangible returns and making use of them.

In Conclusion

There are many aspects to making AutoCAD Architecture work. Through out this session we have looked at the many complex areas that need to be considered. To recap the important factors to enable these are:

- The deployment, relating to Hardware, software and configuration must be correct.
- Suitable content must be in place and methods to add bespoke content defined.
- Adequate training relevant to the workflows to be completed must be available
- Suitable Support will be required
- Communication across all levels of the company must ensure that the process is supported from senior management to the lowest user.
- The correct people with the appropriate skill sets must be available to carry out there specific part of the process.

There are often different methods of complying with these principles and they will depend upon your companies profile and specific work requirements.

I hope that you have enjoyed this session and that it has provided an in sight into how to make AutoCAD Architecture work.

If you require any further help, would like to discuss any of the issues raise or require any information then please contact me at CADPoint on the email below.

Thank you for attending "Making AutoCAD Architecture Work".

Paul Oakley

CADPOINT|AEC

Email : POakley@Cadpoint.co.uk



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