**Building Programming: Ensuring Owner Requirements Q&A**

Q: What was the software being used for the "rough" building section and plan layout?[Thomas Bank] *Trelligence Affinity for programming, conceptual design and Revit integration.- GM*

*All our drawings are created in Revit.(Tzveta)*

Q: What software was the program initiated in?[Charlie Williamson]

*Excel and/or Trelligence Affinity. - GM*

*The program can be initiated directly in dRofus or imported from excel if needed. dRofus link directly from Revit plug in.(Tzveta)*

Q: Is there any direct link to Revit/Bim or is it a transfer of information - ie, recreate/design in Bim using the final information. (Workflow)[Charlie Williamson]

*Link between Affinity & Revit is bi-directional; it is direct, via API. - GM*

*Yes there is a dynamic bidirectional data connection between Revit and dRofus. Direction of information exchange is determined by the user,(Tzveta)*

Q: What is an "IFC" model?[CHRIS MILFORD]

*IFC stands for “Industry Foundation Classes”. It’s an open file format for BIM that allows BIM’s created in any platform to be shared by users regardless of the platform they use. It is supported to some extent by all major BIM platforms. An IFC model is simply a BIM in ifc format. For more information see* [*www.buildingsmartalliance.org*](http://www.buildingsmartalliance.org)*. -DS*

*Open source model.Similar to RVT in Revit but open and not proprietary and anyone can open or use. (Tzvtea)*

Q: do clients worry about data stored in a cloud?[Bari Wetmore Salathe]

*Yes, so make sure to review the cloud service terms and conditions and make sure the client agrees. We also have a private cloud we use for internal virtualized services. – GM*

*The dRofus data can be on a hosted cloud or inside your own firewall if you so choose. There are a lot of security options that alleviate this concern. (Tzveta)*

Q: What software are they showing us?

*Trelligence Affinity, Autodesk Revit, Ecodomus, Autodesk 360 Glue. – GM*

*dRofus & Revit (Tzveta)*

Q: Question for Tzveta: are you finding that these room data sheets are replacing traditional specifications and detail drawings to streamline the deliverables?[Alexandra Hussey

*No, RDS are for informing MEP team of the room requirements and are issued before final drawings. They are not issued for construction and usually have a different set of graphical information.*

*RDA area supplementing and aiding in the creation of drawings but not replacing final drawings or specs. .(Tzveta)*

Q: Have any of the presenters found the CSI "Preliminary Project Description" a vaild starting point for the programming?[Reggie Smith]

*Yes! I use the PPD format in conjunction with the “Assembly Code” parameter in Revit to assist QA/QC - GM*

Q: I work as a technology consultant in the workplace, education and healthcare markets. We find that too often our input to the program comes at SD or DD, and is reactive rather than proactive (and collaborative) in initial programing phase. For all of the panelists, what is the best way to address so that owners receive the highest value for early input on technology (IT/AV/Security)?[Craig Park] [cpark@thesextantgroup.com]

*Using dRofus helps with this issue by opening up access to the project data to all relevant parties earlier. For instance in a dRofus project the Technology consultant could add technology requirements to rooms and departments as they are being programmed (Tzveta)*

Q: How have you found wayfinding is accomadated using programming tools-spreadsheet-stacking diagrams to 3D model[Patrick McLaughlin]

*One way in which wayfinding can be accommodated is by planning for the signage in dRofus and developing messaging for each of the signs in a user friendly database and then directly connecting that to sign families in the model (Tzveta)*

Q: Can you share the programs the presenters are using, or resourses to find them?[CHRIS MILFORD] *For Affinity program information, view them on the web at [www.trelligence.com](http://www.trelligence.com). – GM*

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Q: My experience is that programing works well if the owners could make up their mind early on and do not make last minute changes, often time, too many. What is your suggestion on that [Prabhansu Ghoshal]

*I would not anticipate the owner community changing their behavior in the near term, which is why it is important to have a process that is flexible enough and robust enough to respond to the inevitable changes that will occur during a project.  One strategy to approach this with is to encourage the owner to explore as many alternatives/options as possible (as in, significantly greater than 5, like 100) during the early programming stages of a project, so that the entire design space is explored, giving the owner greater confidence that they have selected the “right” design for the project.  Once these alternatives have been explore, it is important to capture the option’s “properties” so that the design direction is well documented and can be relied upon for budgeting and other early design decisions and to place the project on a good path forward into the latter design phases. - JR*

*Owners often simply cannot make decisions early in a project. Utilizing a unified database (dRofus) that is capable of facilitating ‘Data Evolution” allows for only generalized information to be tracked early in a project. Then as information or decisions get made later that information can become more detailed or specific. (Tzveta)*

Q: How are program options presented? [Brok Howard]

*Trelligence Affinity allows you to either 1) create multiple versions of the program in the same project file so that they can be compared and displayed on screen and in reports, and/or 2) create multiple design scenarios and validate each of those against each version of the program. – GM*

*PDF Reports are the most popular way (Tzveta)*

Q: Can the Owner's Project Requirements (OPR) be incorporated into the Program phase?[Michael Chelednik]

*Yes in Trelligence Affinity. Questionnaire or Forms input can be used to capture OPR information. The database can hold any user-defined information and requirements at all levels of the project, including the Project, Site, Buildings, Program requirements, Rooms and Equipment. - GM*

*With dRofus yes. (Tzveta)*

Q: Can you address the answers to your learning goals.1. Be able to lead a discussion regarding building programming within your firm, “What is it?” 2. Be able to guide a project level discussion to consider using a building programming application, "How to get started?" 3. Be aware of available software technologies for building programming, “Available applications” 4. To be able to discuss the overall value of building programming to the project and client

[George fflynn]

Q: Wonder how those present manage changes during design - program changes later in the design process.[Brok Howard]

*Trelligence Affinity maintains separate Program and Design models, The program can be changed at any stage of the design process; new design-to-program variances will be highlighted to the design team. – GM*

*Change in inevitable and using a templates base data tool (dRofus) allows you to react to programmatic changes quickly and accurately. dRofus also tracks any changes made to the template by displaying a “\*” sign next to the changed field. (Tzveta)*

*Everything comes down to documentation.  If the team does a good job of laying out assumptions early and making sure everyone starts from the same place, it becomes much easier to track changes during any stage of the design process.  That is part of what makes the graphical interface in programming so important.  It is just another means to ensure that everyone truly understands the full implications of the project and is an easy way to track changes. -JR*

Q: Since most of this programming is doen electronically, How do you have client "sign off" on program and room data sheets?[Americo Crincoli]

*Print PDFs to paper and sign is one method. However, in dRofus you can also grant them access to a Read-Only version of the data that has a “signoff” approval check that they need to click. (Tzveta)*

*Everything is electronic, but at some point you must have a formal approval.  A physical signature is not necessary, but we generally require a confirmation from the owner that they received and agreed with the direction we are going in.  Usually an email confirmation will suffice. – JR*

Q: What is the ROI for this type of planning software especially in a small firm? Are their low cost versions of the software?[Raymond J. Kelly]

*ROI calculations are highly subjective – if you do not have base metrics it’s difficult to calculate. But, if have been programming for any length of time, it should be easy to think of time spent resolving program validation late in the process, e.g., missed target areas in CD’s – that one place where the costs becomes easier to justify. – GM*

*ROI can be significant and depends on the type and size of the project. The cost of dRofus is directly related to the size of the project not the size of the design firm. So the smaller the project the lower the cost of dRofus, so yes it can be very effective for smaller firms. Please contact dRofus directly for further information. Tzveta)*

*What is the value of one additional project win, because a project team was able to help a client through the challenging “go/no go” decision making phase? - JR*

Q: What is the software the FLAD uses to connect their Revit model to the Room / Equipment database?[Brian Smith]

*dRofus (Tzveta)*

Q: Any lessons learned when gathering data from clients/owners. Things that may crop up over and over.[Ted Porter]

*They only pay us to do it once, right. – GM*

Q: WHat is the name of the software package(s) that Mr. Messick was showing?[Steven Rieck] *Trelligence Affinity, Autodesk Revit, Ecodomus, Autodesk 360 Glue. - GM*

Q: What software have you found most effective?[Buddy Caldwell]

*dRofus. It is webbased and plugs in Revit. (Tzveta)*

Q: How you cope with enormous amount of client requirements, codes, regulations, standards, recommendations, etc for complex projects. I had 7,000 items to deal with in my recent project presented in fragmented documents, very often contradicting each other. [Voytek Pniewski] *Trelligence Affinity can store any user-defined information in the project file and users can create custom reports to present the information in any format. – GM*

*Use dRofus – a Centralized Database that is cloud based so multiple users input and access the data not just a 1 or 2 users. This eliminate or at least drastically reduces fragmented documents, as all the requirements will be entered into the 1 database (Tzveta)*

Q: How do the various rpogramming tools deal with space adjacencies programmatically and graphically in 3D?[James Snyder]

*Trelligence Affinity includes interactive bubble / relationship diagramming based on the program requirements – they are shown graphically in 2D. It also includes interactive building stacking diagrams in 2D, and a 3D viewer. - GM*

Q: the room data sheets and plans are they done in revit ? what version?[Gregory Boll]

*Trelligence Affinity can produce detailed room data sheets that include program requirement data and room data in Affinity, and the room 2D image pulled directly from Revit. – GM*

*dRofus works with Revit 2012 – 2014 (Tzveta)*

Q: What softwares are being used for these databases? Are they Revit Add-ons, custom software by design firms?[Alexandra Hussey]

*Trelligence Affinity is a stand-alone commercial software application that includes a bi-directional plug-in for Revit. – GM*

*dRofus (Tzveta)*

Q: Are you able to export data from this design model to develop probable cost estimates for the client?[Glenn Ryan]

*Absolutely.  DProfiler is the software platform we developed and use at Beck, and it has cost data integral to it.  So we get a cost update with every update to the model.  If you are using a room data sheet model to build your program, then you can easily assign costs to the individual items in the room data sheet.  These would then roll up to the overall project cost.  I have seen other firms use different means to get their cost estimates, but DProfiler is the only one I know of that integrates the cost in real time. - JR*

Q: The technology that was shared from Revit, Affinity, dRofus and dProfiler - when working with different external teams, how do you expect those people to acess the data? Or does it stay with the origional tool and you share by export/report?[Brok Howard]

*Trelligence Affinity includes a “viewer:” for 3rd party access, and web-based access to the project file to run reports and enter data (e.g. equipment, room data) via forms. Its link with Revit is via API plug-in that is bi-directional. Affinity can also export data to Excel, COBie, IFC formats.-GM*

*Everything is exported into a report format.  We typically will work in the model live during a meeting and then can share the input and results with the owner during the meeting.  Once is it over, we will print up a report with the data the owner is asking for.  But we have also worked with owners who have purchased the software and we will gladly share live models with them for their project.- JR*

*dRofus is cloud based and once purchase for a project has Unlimited users that can be granted access to the database. They can be located anywhere in the world as long as they have an internet connection. (Tzveta)*

Q: Could the speakers address the particular strengths/benefits of the applications used - Trelligence Affinity, dRofus, ecoDomus, Beck dProfiler.[Michael Tardif]

*Trelligence Affinity: Synchronized data throughout the programming and design process allowing ongoing validation of the design to the program.- GM*

*DProfiler allows teams to interact with the project stakeholders early in the planning process and provides a common foundation for the project team. Since the software works in real time, users can see project effects (design, estimate and schedule) as the changes are being made to the model. This type of clarity allows for open communication and reduces value engineering later in the building process.- JR*

Q: Presenters keep referring to software packages and types of software but no mention of what the names of the software they are using. Can they illustrate.[Americo Crincoli]

*Trelligence Affinity for programming and early conceptual design. - GM*

Q: For John. Regarding the optimization tools you referenced, your voice broke up. If there are optimization tools for space planning/adjacencies, this would mean that software is parsing through multiple alternatives, so does that mean that there are actual "prescriptive" tools, actually telling you what to do?[Cherif Hassan]

*I wouldn’t go so far as to say “prescriptive”.  The optimization tool (optioneering) takes a set of user defined parameters for a building and then iterates through multiple scenarios (number of scenarios can range from 1000’s to millions).  We then parse the data based on specific criteria we are looking for (i.e. cost, energy efficiency, etc.).  The results can then help guide the design team in a direction.  Most of the time it has generally been confirming of the direction we have started in, but we have found some surprises.  We currently use it for studies of the overall building at the massing level (shape, location, rotation, skin types, etc) but optimization at the department level is in development.  The design process is subjective and there is no “best” model but using optioneering we can eliminate non-viable paths as well as provide data to help validate options. - JR*

Q: This webinar was very good; however, as with most 1 hour programs, these just touched the surface on this subject. Can you recommend a good place to learn about the programming software and processes? [Wes Herlan]

*www.trelligence.com – GM*

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