



WHERE THE RUNWAY ENDS

PAULA HOCHSTETLER, President, Airport Consultants Council, and DAVID HANSON, Senior Vice President, Walbridge Aldinger Company and Chairman of ACC's Project Delivery Methods Committee, talk about the challenges facing airports as they look to expand.

What industry standards currently exist for project delivery standards?

PH: There are actually two documents which outline project delivery methods. One, entitled "Airport Owners Guide to Project Delivery Systems," was released in October 2006. It was developed jointly by three associations.

DH: It's the first of its kind focused specifically on the airport industry, and it was jointly put together by the Airports Consultants Council, Airports Council International North America and the Associated General Contractors of America, so it has three very different perspectives. It offers a set of definitions that can be a point of departure for anybody who wants to move forward on looking at alternative project delivery within the airport industry.

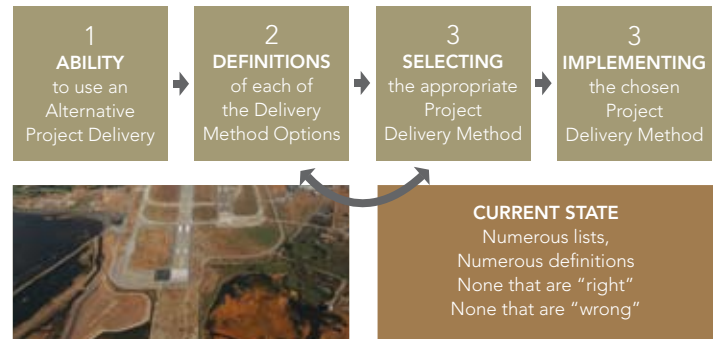
PH: Another important document in the arena addresses project delivery methods. It is an advisory circular concerning consultant selection and consultant services. The Federal Aviation Administration (FAA) Advisory Circular 150/5100.14D serves as the regulatory guide for architectural, engineering and planning consultant services for airport grant projects. It has a specific section entitled "Alternative Project Delivery," which is another worthy source for learning about project delivery methods in the airport arena.

What are some of the main objectives of these documents?

DH: The guide deals with a process that one should look at when they are embarking on any project trying to choose the appropriate delivery system. It outlines a four-step process: The first is determining whether or not you have the ability to use alternative delivery. In other words, some airports are constrained to only do design/bid/build. If you get past that step and find that you can use alternative delivery approaches, then the next step in the process is to define what the different methods are that you might consider. The third step is to basically get to the point of choosing one for a project. The fourth, of course, is implementation.

In doing this, you not only have to look at what your internal capabilities are and how you could manage a project, but also what the goals are that you are trying to achieve. The document is written to be what we call "delivery system neutral." It doesn't really advocate any delivery system; it just focuses on the steps one should look at to make a choice. There is no perfect delivery system for all projects, but there are some that adapt better for some projects than others.

The Four Steps on the Road to Alternative Project Delivery



Source: Airport Owners Guide to Project Delivery Systems

PH: These four steps provide a lot of clarity. In particular, step two refers to the need to take time to clarify and understand the definitions associated with alternative project delivery. Often, management thinks that they don't need to know the definitions, which leads them to jump a step. Those involved in this process will often go from learning that they are allowed legally to deal with other project delivery methods to selecting which method to use. They don't take the time to clarify definitions and understand what's involved in the different project delivery options, which is a very important step.

What main factors should airport owners consider when looking to expand?

PH: Some factors that pertain to project delivery are schedules that the project is on, certainly the size of the project, the funding sources and what can legally be done at a particular facility because these are going to vary from facility to facility.

DH: Complexity is one factor that can have a lot of impact. If a project is a simple expansion of a terminal, it's much different than relocating a terminal to the other side of the airport. The program of moving the terminal might involve 50 separate projects – relocating roads, changing access patterns and changing the airfield taxi-way configuration to service the new terminal. Those types of things lend themselves to a program with a lot of different projects. Each of those projects might very well lend itself to a different project delivery system. There might be different project delivery systems chosen for individual projects within a complex expansion program.

PH: If you are talking about factors to consider when expanding airports in general, certainly the stability of the airlines and service to a particular airport is a factor. David, I have a question for you: When it comes to project delivery methods, is one method better than another if you've got unstable airlines? Maybe that is just a problem regardless of the delivery method you'd use.

DH: I guess if you are looking at unstable airlines, you would want to look at project delivery systems that would be very flexible throughout its process, in case things changed. That would probably move you away from design/bid/build and more into a construction management approach, or maybe even a design/build where the change provisions might be a little more attractive to those for adjusting to things like that.

Now that we have mentioned the most common project delivery methods, could one of you define them?

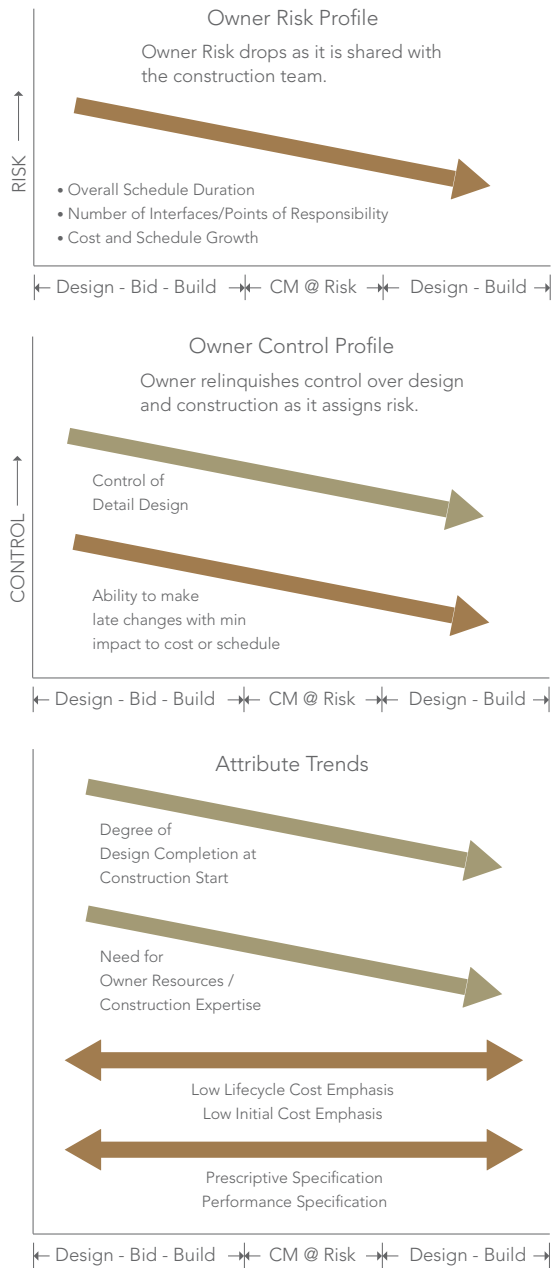
DH: Design/bid/build is very often referred to as the traditional process. An owner hires an architect or an engineer and allows them to go through the vast majority of the design efforts to a point where he assembles a set of bid documents and puts them out for competitive proposals where selection is made almost entirely on the basis of cost. It is a linear process that is designed, followed by a bidding period, followed by a build phase. The vast majority of the design is done before the build starts.

PH: The construction is based on cost, but the design is not based on cost.

DH: Yes, that's very true. The designer is usually selected based on some form of quality-based process where he is chosen on his qualifications, and then finishes the documents under some form of negotiated contract. Moving to construction management, there are still two separate contracts. One contract is between the owner and the designer. The construction manager is usually chosen on the basis of what he can bring to the project in terms of input during the design process as well as his ability to build the project. Very often the construction manager is hired at the same time or very close to the same time as the designer. The construction manager tends to work in a collaborative mode with the designer and the owner on budgets, schedules and alternative approaches. A term that is used to describe this is "value engineering," which is looking at different alternatives and costing them during the process. Leading at some point to a price, very often this price is a guaranteed maximum price for the work. This is commonly referred to as construction management-at-risk.

There is a variation of construction managers where a consultant is hired to perform most of the same tasks, however, he does not normally guarantee the price of the project and he really becomes an agent of the owner as a project manager or construction manager working as a consultant. Rather than being a delivery method, we look at that as a management method. Therefore, the term "construction management" can have two very different definitions depending on the tasks assigned.

The third method is design/build, where an owner hires one entity which is either an integrated firm that performs both design and construction or a team of a designer and a constructor who come



Source: Airport Owners Guide to Project Delivery Systems

together to perform all the tasks of the designer and construction manager in a construction management-at-risk approach. Specifically, it gives the owner a single point of contact, a single contract and really a single place to look for all of the answers to the issues. It is a little different and it has been developing over the last few years as an alternative to traditional delivery. In the airport environment, it is probably used the least of the three, but there are many instances where it has been used and used successfully.

What are some additional advantages and disadvantages of each of these methods?

DH: Let me give you two examples of where time could be either an advantage or disadvantage for different approaches. The Tampa airport wants to open its new mid-field terminal in 2015. It was approved last year and they are on a very structured process to hire

consultants, do master planning and start looking at alternatives for the way the terminals might be built. They are going through a long design process as well as a long process of preparing a site. They will not be making final decisions on some of their actual delivery systems for various parts of the project until as late as 2011 or 2012.

Contrast that with a number of airports which have been given the opportunity to have Southwest Airlines to serve them in the last few years. Southwest decides in November that they are going to start service in June of the following year and they don't have extra gates so time becomes the driver of the process. If you want the fastest delivery, very often this will push projects toward a design/build or a construction management approach because the phases of those can overlap and the schedule can drive it.

A lot depends on what is going to be built, how much time there is to do it, and of course, the level of cost that needs to be determined early on. Very often the construction management or design/build form forces costs to be better defined earlier in the process; it can vary by project. If projects are moving along on a lengthy and structured timeframe, all choices are available, but some start to disappear as costs and schedules get tighter in terms of their determinacy on the project.

PH: Another important factor is the extent of the control the airport requires – or requests. As you go from design/bid/build and then shift over to design/build, you give up a degree of control. If an airport is not comfortable giving up that control, then despite the potential schedule or cost advantages, it may not be something that the airport will culturally choose to do.

DH: That's very true; the delivery system has to meet the culture of the owner. Also, the ability of the owner to respond and have the resources to manage the various systems with some degree of variance in them can have an impact. Not to avoid the question of what the advantages are of each method, but the advantages vary by situation.

What are the major obstacles facing airport expansions? What are some common pitfalls and how can they be avoided?

PH: The big gorilla in the room is having adequate funding to move forward with Airport Improvement Program (AIP) and Passenger Facility Charge (PFC) being debated in the current FAA reauthorization process that's underway. There is also a lot of discussion about various bond-related regulations and whether they should change. Another concern is the welfare of the airlines as well as the press for non-aeronautical revenues being generated by airports. Some pitfalls are the increasing costs due to rising fuel and steel prices. Also, labor shortages associated with immigration tightening has caused some projects across the country to lose half of the crews at the airports when they have to leave the country. There are environmental-related delays which are also important.

DH: The changing demographics of the construction workforce in this country certainly are making it more difficult to get adequate tradesmen to work in cleared areas where background checks are required and it might conflict with immigration status. One of the other issues that come up with many projects is the uncertainty or inability to project when regulatory decisions might affect a particular project, like Environmental Impact Statements (EIS), are going to be approved and what the impact might be when they are approved. Any instability is something that impacts projects

very significantly with regards to when they can start. The change that has gone on, certainly since 9/11, is a tightening of regulations that affect the configuration of terminals, in terms of how much space has to be devoted to the specific issues that people see when making areas for personal security, but also for the size, configuration and equipment that is used in those areas that you don't see. There are Transportation Security Administration (TSA) ready rooms and training rooms, etc. Baggage handling and screening issues have impacted how bags are processed from the time they leave the hands of the customer until they reach the belly of the airplane. These issues have also had some very interesting impacts on projects under construction in the last few years – even in the middle of the construction periods.

Do you have any tips for airport owners who are considering this sort of thing and how they can avoid some of the obstacles?

DH: It is important that people spend significant time in the planning process to come up with the “what ifs” that could go wrong during the project. In the days since 9/11, there have been changes in the security processes, spikes in construction costs, manpower shortages in the construction industry and immigration issues that revolve around getting people into cleared areas of airports – all have been kind of a “perfect storm,” not just for airport projects, but for many types of projects. Studying similar projects and how they have both experienced delays or conquered these problems is very good advice to anybody. Look at the lessons learned of your peer group as you move forward.

So, in order to avoid pitfalls, you have to recognize that they exist and plan accordingly?

DH: Absolutely. There are “perfect storms,” but there is no perfect project.

PH: The key that David has really hit on is thinking in advance of the “what ifs.” If you know them in advance and have some contingency in mind, you're better off than if you assume everything is going to be perfect.

Clearly, project oversight plays a big role in any large scale construction project. Why is it important and what steps can an owner take to ensure that an oversight program is handled successfully and efficiently?

PH: Without proper oversight you waste money and time. Safety also becomes compromised without proper oversight of a project.

Steps to ensure success in efficient oversight is to choose the correct and appropriate project delivery mechanism and to hire the most qualified team. Communications are always crucial; a good team that neglects communication leads to complications at home or on projects or anywhere else.

DH: I think good planning helps here also. You can't underestimate the load that a complex project will put on your existing staff. Some people make the mistake of thinking that the people running their airports can also run their projects. Projects require a lot of attention, a lot of decisions and a lot of interface. As Paula said, that interface requires communication. Airports have to make a decision on management strategies to make a project work. If they are in an ongoing construction mode all the time, they might very well determine that they can handle the impact of another project internally. The majority of airports that are looking at taking on large projects that are inconsistent with their current workload usually look outside and hire consultants to perform some level of their processes. They will often hire a program manager to help them go through the planning, procurement, development and execution of the construction. They might choose to hire consultants to augment their own staffs to do this as well. The real key here is that you have to be very careful not to underestimate the impact that building something will have on the people that are trying to operate the airport at the same time.

Do either of you have any final thoughts or parting words on project delivery methods?

PH: Basically, I'd like to emphasize that there is no silver bullet or single method that works for all situations. It is crucial that any airport take a careful look at which mechanism or vehicle works best for them, because no airports are identical, and there will be no method that is best, all of the time.

DH: We are not making light bulbs when we're building airport terminals. Each one is a prototype that requires a very insightful process to be taken on by a vast number of people to continually look at the underlying assumptions they make on every decision in order to make those decisions well. Airport owners need to use every resource available at their disposal, including those that are in their ownership, whether it is county or state or airport authority. Also, these owners should consider using the most qualified consultants, and consult with their peer groups to get the best advice. At some point, they will have to make the hard decision of what delivery system they are going to use.



Paula Hochstetler is President of the Airport Consultants Council (ACC), an international trade association based in the Washington, D.C. area that represents consultant firms and related businesses that provide airport development and operations expertise. Hochstetler advocates for the interests of airport consultants and suppliers in both the governmental and commercial arenas. She has authored articles, provided testimony before the U.S. Congress and presented at many government and private sector events. Prior to joining ACC in 1994, Paula spent 15 years planning airports worldwide.



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