Bridging the knowledge gap webinar - 9 May 2024

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SUMMARY KEYWORDS

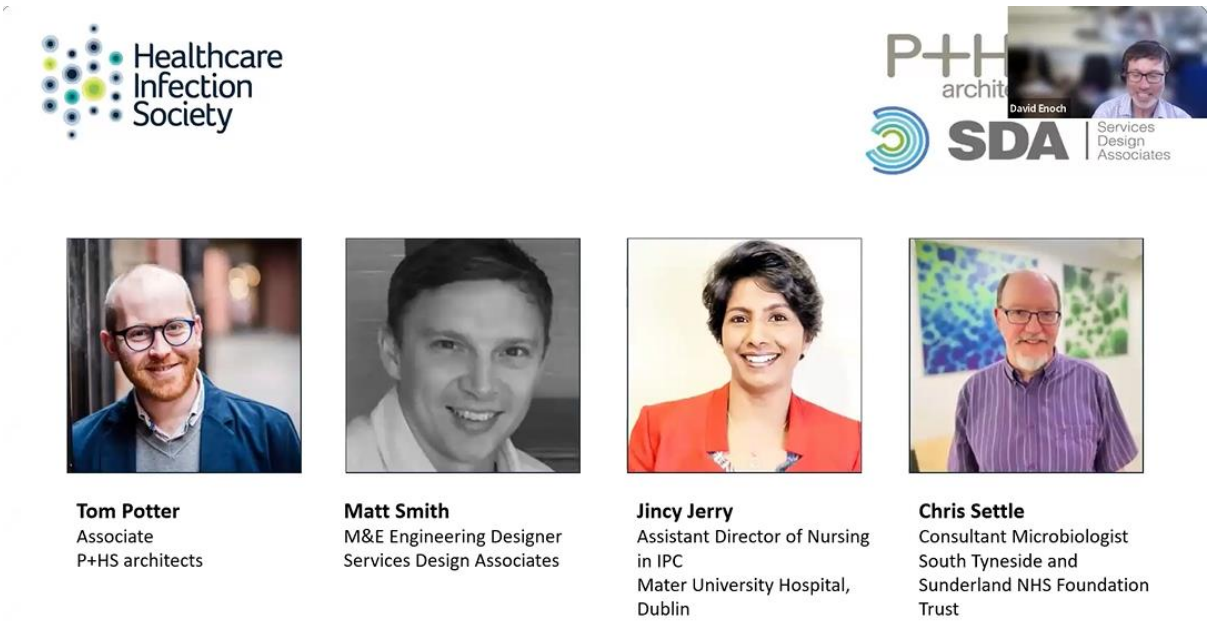
IPC, design, infection control, stage, point, project, team, building, early, bit, architects, process, work, standards, trust, RIBA, view, stakeholders, requirements, engineers

SPEAKERS

Jincy Jerry, Tom Potter, David Enoch, Matt Smith, Chris Settle

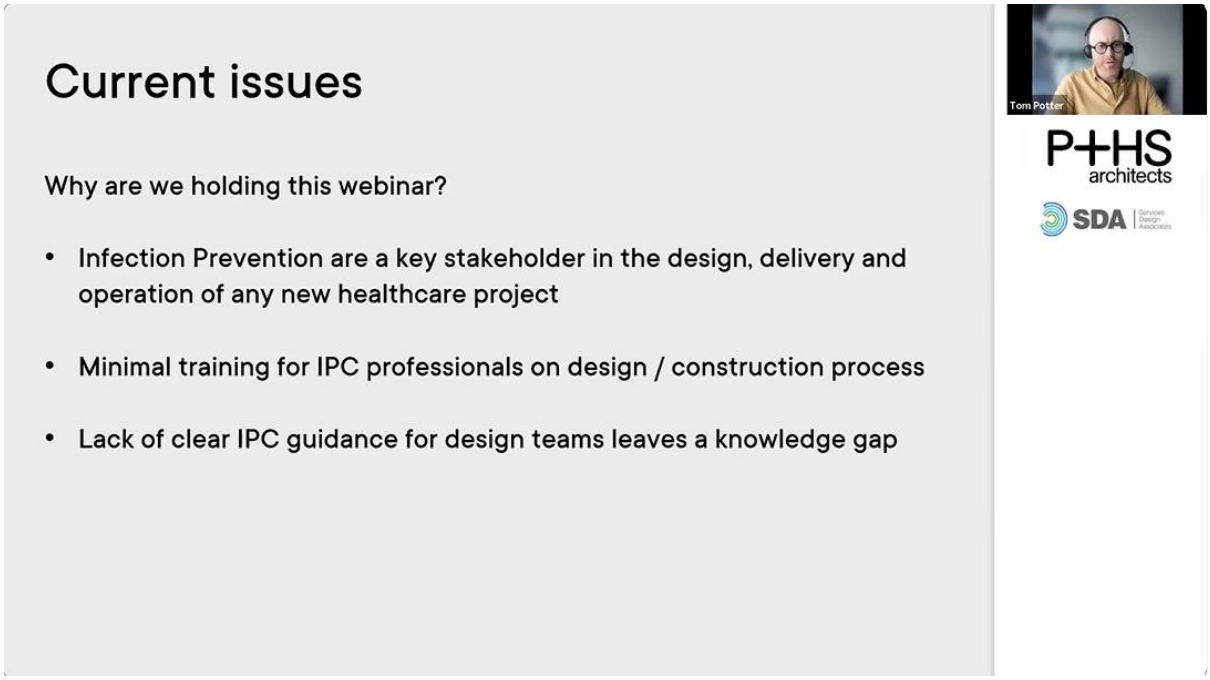
David Enoch 00:00

Alright, hello. Can you all hear me? Yeah, marvelous. Hopefully people have started joining. So just to say thank you all for joining our joint webinar from the Healthcare Infection Society, P+HS architects, and Service Design Associates. Today's webinar will focus on bridging the knowledge gap between infection prevention control professionals, architects, and mechanical electrical engineering consultants. And we're joined by Tom Potter from P&HS, consultant architects. And we've also got Matt Smith from Service Design Associates, as well as Jincy Jerry and Chris Settle from the Healthcare Infection Society. And their information is on the web and on the thing now.



And so before this webinar, we asked you submit questions to Slido to the panel. But we'll be able to answer some of those questions, we'll try and answer some of those questions after the talk in the second half of the presentation. And to participate, please open the slido via the link, which is in the webinar chat and on the screen and just click on the QR code. Right. So I think if everybody's ready, I think we should start the presentation. And we'll go with the architects and the engineers first. So Tom, I think when you're ready, would you mind sharing the screen, please? And thank you.

Tom Potter 01:31
Thanks very much, David. Okay, so this was a topic that we started to explore a few months ago, where we as architects, and Matt from an engineering point of view run into similar issues across multiple schemes to do with the way IPC guidance is integrated into a design.



So we started these discussions with the HIS and identified that there was potentially this this knowledge gap between what the designers understand of the process, and what the IPC professionals understand of the process. And IPC are a key stakeholder in the design of any new healthcare project. It became clear from those early discussions that there wasn't a huge amount of training for IPC professionals on how a design project is run. And that results in a lack of clear IPC guidance for the design teams. So that's the knowledge gap that we're really trying to explore.

The topics we wanted to cover in our bit of the presentation is looking at what the current IPC guidance is that we on the design side are using, some of the current issues that we face, a bit of talk about the conflict and trade offs between trying to integrate different guidance. And then we're going to go through the RIBA plan of work, which is the different design stages that we follow from a consultant side as we're developing a new project. What we're hoping to get out of this is to hopefully, it'll, it'll be brief, but give you guys some idea of the RIBA stages of work, and how that project development happens, sort of key stages along that that path, identify the priorities, potentially for IPC at each of those RIBA stages, so you can see the impact that IPC input can have during stakeholder engagement, and then talk a little bit about the awareness, raise the awareness of the impact those decisions can have, where decisions that may seem on the face of it very simple can have a significant effect on the wider building design.

Desired outcomes

1. Understand the relevance of the RIBA Stages of Work
2. Consider priorities for IPC input at each stage
3. Awareness of the impact of decisions on wider project

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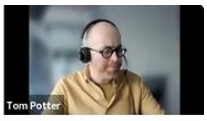
So the conflicts and trade offs that we talked about. IPC is a really critical stakeholder for our design process. But I guess what we're trying to highlight here is that IPC aren't the only stakeholder. And so the reality is, in any design project, there's conflicts, trade offs between different constraints. And I won't run through all of these, but you can see them there on the screen.

Conflicts and trade-offs

Ease of access for maintenance	vs	Jointless and seamless finishes
Quality of patient environment	vs	Ease of cleaning & maintenance
Natural ventilation	vs	Mechanical ventilation
Design intent	vs	Human behaviour
Best practice	vs	Written guidance
Stakeholder aspirations	vs	Project budget and programme
Preferred layout	vs	Site constraints



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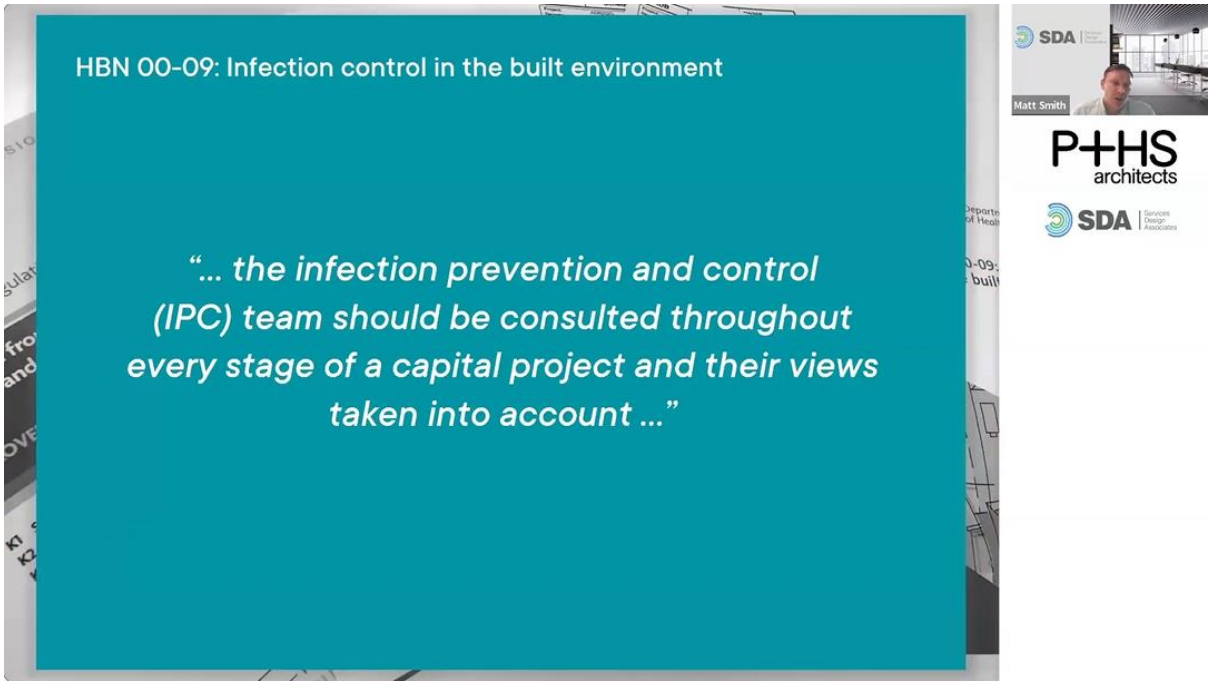
There's lots of ways in which the ideal situation that one stakeholder party might want, be that IPC or fire, or the clinical team, or anyone, could be us as the architects pushing for something. It's always

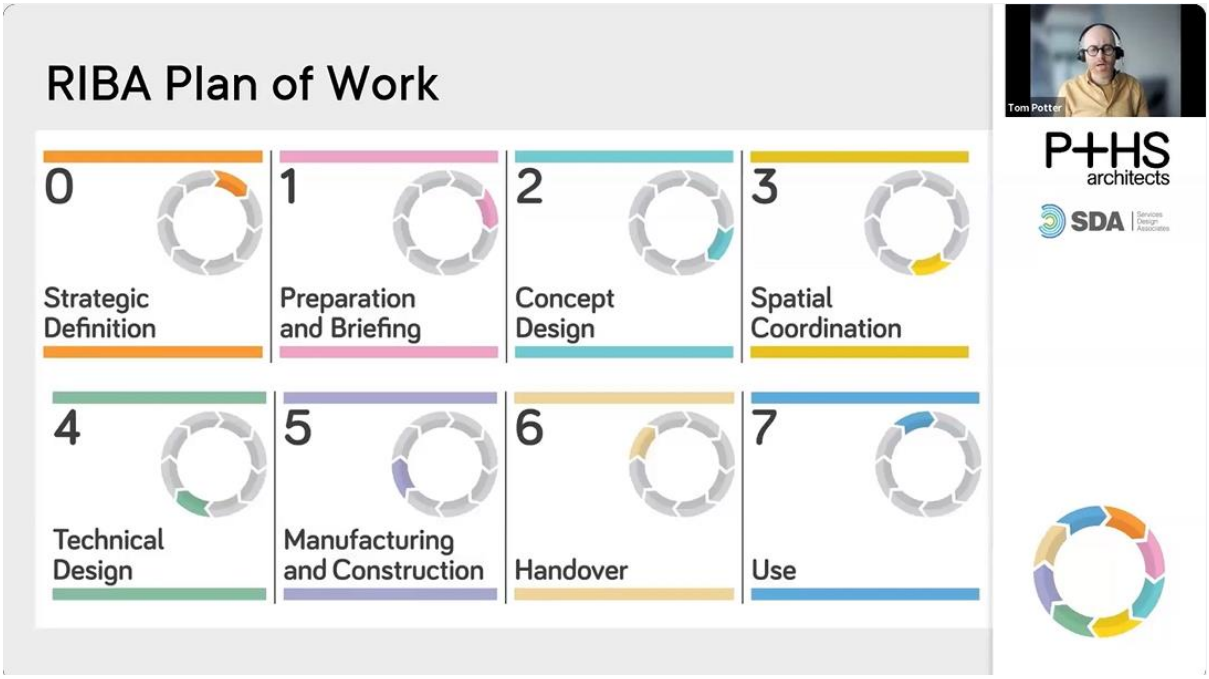
going to bump into other constraints and other requirements from other stakeholders. And so it's being part of the design team discussions, and not looking at IPC input in isolation. But being part of that wider discussion, understand the context in which decisions are being made, can lead to an informed conclusion and integrate the best bits of what everyone wants into a design. So, the guidance that we look at from an IPC point of view. There is various different documents. So some of you may be aware of the HBNs, the health building notes. So our key one for IPC would be HBN 00-09, prevention of infection. There's also advice in HBN 00-10, which covers finishes internal finishes, such as flooring, walls ceilings. And then we get some advice through ADB, which, for anyone who doesn't know, it's a bit of software called Activity database, which the NHS produce, which gives data sheets describing the environmental parameters, as well as the components that go into a specific room type. So we sort of pull those together.

Matt Smith 05:49
In addition to that, from a building services point of view, we have obviously HTMs, health technical memorandums. Which HTM 03-01, in particular in question for infection control is ventilation. And HTM 040-1 is for water. Of course, there is a full suite of HTMs that go on further into building services. But these are the two in particular ones that are focused on with infection control. And in addition to this, there's a lot of trusts and IPC have their own standards across their sites as well, that need to be taken into consideration, things like water safety plans, etc, that we need to be taking into consideration at an early stage. Just to reiterate on Tom mentioning, the HBN 00-09 infection control, just to put into some perspective, the element of why they're obviously required through each capital stage of the project and their consultation, they put a whole page in the HBN for this to clearly highlight that this should be carried out across each stage of a project. Make it crystal clear.

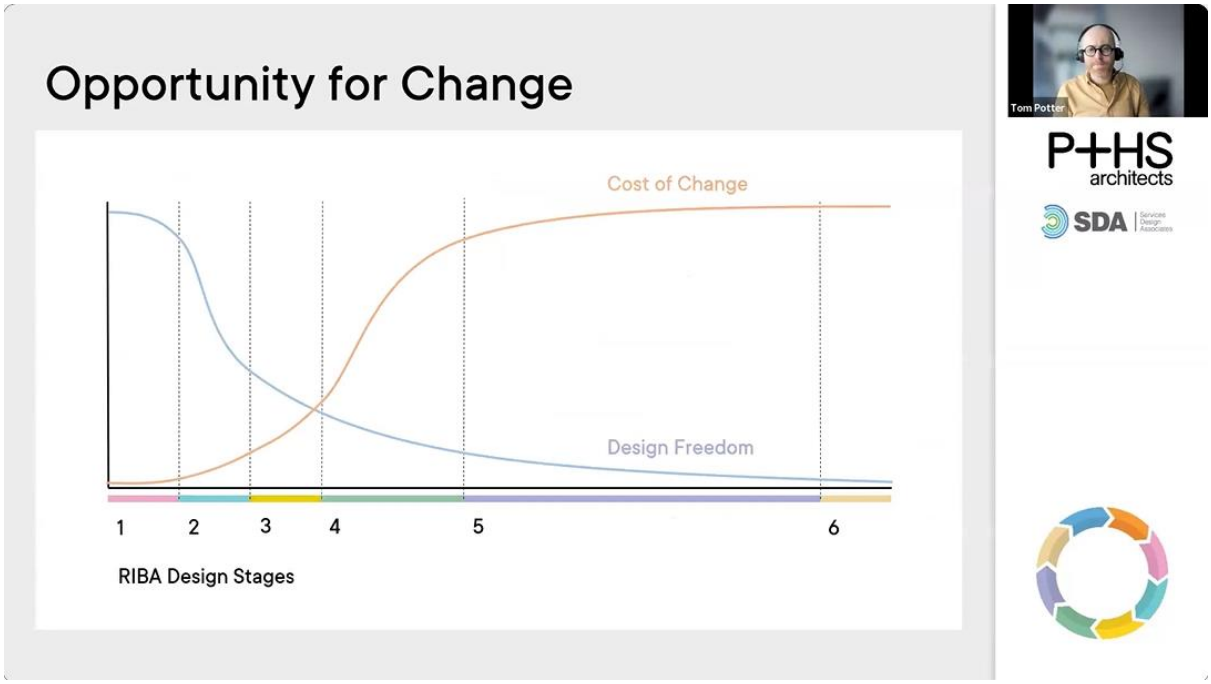


Tom Potter 07:05

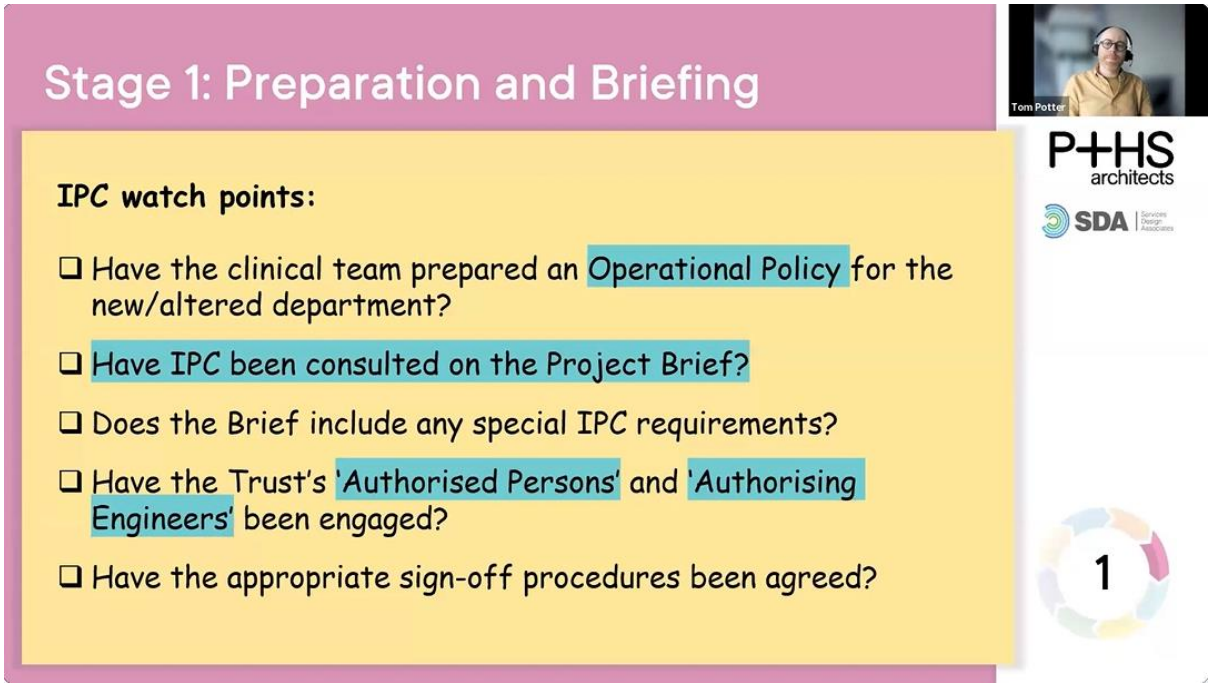
So I mentioned before that we were going to look at the RIBA plan of work. So this is something that the RIBA which is the Royal Institute of British Architects, something they produce. And it's, it's followed as a sort of industry standard in the UK, and recognized elsewhere. So there are seven, eight sorry, distinct stages of project development.



And I'm just gonna blank off naught and seven, because they're sort of beyond the scope of this discussion. And what we're looking at really stages one to six. So that covers the entire duration, from the very initial design meetings, when myself and Matt might start to get involved right through to handover of a completed building. And there's different levels of IPC input that you can have at different stages along that journey. One of the things we're trying to stress today is the importance of early engagement from stakeholders, in this particular case, IPC. So in this graph, you can see the RIBA design stages along the bottom as the design develops, and then you've got longer periods as it's on site under construction. And it's highlighting that the biggest opportunity and lowest impact for making a change to a design is right at the early stages, it's where you've got the biggest opportunity to influence the design, and it's the lowest cost of impact. Because the designs are at an early stage, you're not having to redo abortive work and not have to change anything physically on site. The earlier everything can be locked into the brief and integrated into the design, the better for all parties.



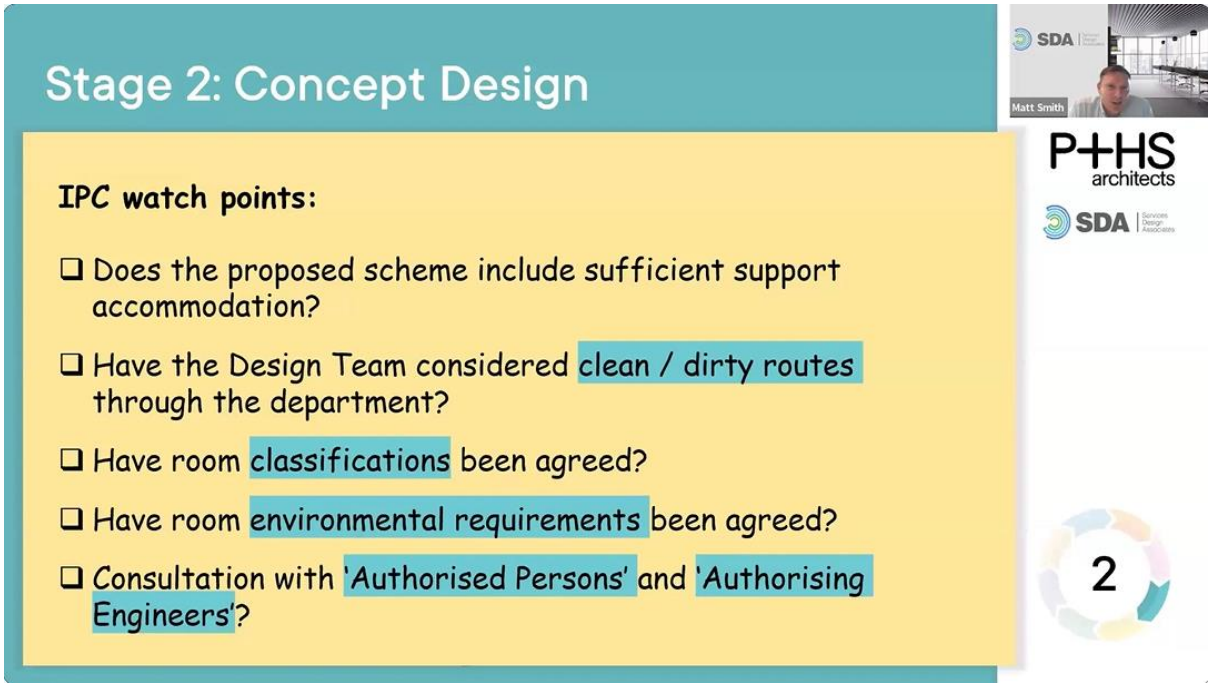
So now we're gonna go through each of the stages in a bit more detail, describe what they are, and then look at the IPC input at those particular stages. So stage one, preparation and briefing. So this is, after the trust have decided they're going to go ahead with a project and they're starting to look at appointing a design team and briefing the design team on what they want the project to achieve. The IPC watch points for that. So it's quite often the case that although HBN 00-09 will encourage IPC to be involved through all stages, and it has quite a good section in the introduction about, similar to this presentation, of the different design stages and the sort of input you'd be looking for. But for us, it's making sure that there's a clear clinical brief, clinical team ideally have prepared an operational policy. They may have one for their existing department, but have they prepared once the new department, how they want to operate this, and have IPC been part of that development? And have we incorporated any IPC requirements in the project brief.



Matt Smith 10:03
For me, that's kind of a key element. And it's an element that always seems to get missed early on is that initial engagement with IPC, and relevant stakeholders as well, to run through, they tend to be coming in, later on into the RIBA stages as we go through them, which, as Tom's rightly shown on the graph can have a cost implication when it looks to come to carry out changes, etc, with things that we could have ultimately avoided. In addition to that, and kind of linking into specific requirements, obviously, getting these guys on board, early doors from our side can from any particular trust standards that are there and present, it could be regards to levels of filtration for specialist ventilation, as I've mentioned, water safety plans that are specific to that and unique to them trusts. And ultimately, like myself, and Tom would need to know that information to make sure that it's implemented and move forward within the design. In regards to authorized persons and authorizing engineers initially, I'm kind of assuming people know what they are. But just to give you a bit of an overview, an authorized persons are typically someone that's employed by the trust, and they are operationally responsible for the specialist services, and must be experienced and skilled to operate that specialty service. These are things like electrical elements, decontamination, bed gases, water, ventilation. And similarly with authorizing engineers, well, these are independent. So these hold independent views from their perspective. And their roles and responsibilities are effective management of safety guidelines recommended by the Department of Health. So we see this quite a lot in the fact that because they're independent, they're kind of forgotten about at the initial outsets. And again, they're coming in at kind of RIBA stage three and four when the design is quite progressed. And we tend to find then that their ideas, thoughts, sometimes are difficult to implement, because we're so far down the line. If we'd had that initial engagement early on, we would have been able to also explore these avenues with the appropriate AEs and APs. And APs are important because obviously the operational side of it. So we need to be considering at this outset maintenance and kind of how the how the scheme could potentially post handover be moved forward and managed by the trust. Have the appropriate sign off and procedures been agreed? So through the RIBA stages, we need to kind of highlight when sign off

and procedures are going to be determined ie milestones, so that we can ensure that we kind of, from our perspective, we need to make sure that we have the relevant safety groups, etc, kind of ready and are aware of the scheme so that we can ultimately make sure that they align to our project programs, and so forth. Because these guys only meet so often, and it's difficult to organize that, again, we see time and time again, where it happens later on in the stages. And we're kind of backed against the wall a little bit in terms of having to make changes to the design to accommodate things that could have been avoided.

Tom Potter 13:16
So RIBA stage two, concept design, is where it starts to get exciting from our point of view, architecturally. So this is where we're starting to look at how the building might look but sort of building up with the massing of the building, the footprint, where it sits on the site, how it links up with the rest of the site. And it's, it's a really critical stage, because all that is then starting to get locked in in terms of the 3D space of the building, which introduces constraints on the engineering, and sort of starts to have knock on effects to various other items. So you can see on screen there, we'll be doing the sort of sketches, and the nice bits and doing some coloring in. Well, Matt and his side will be starting to look at systems and sort of diagrams of how the building might work.

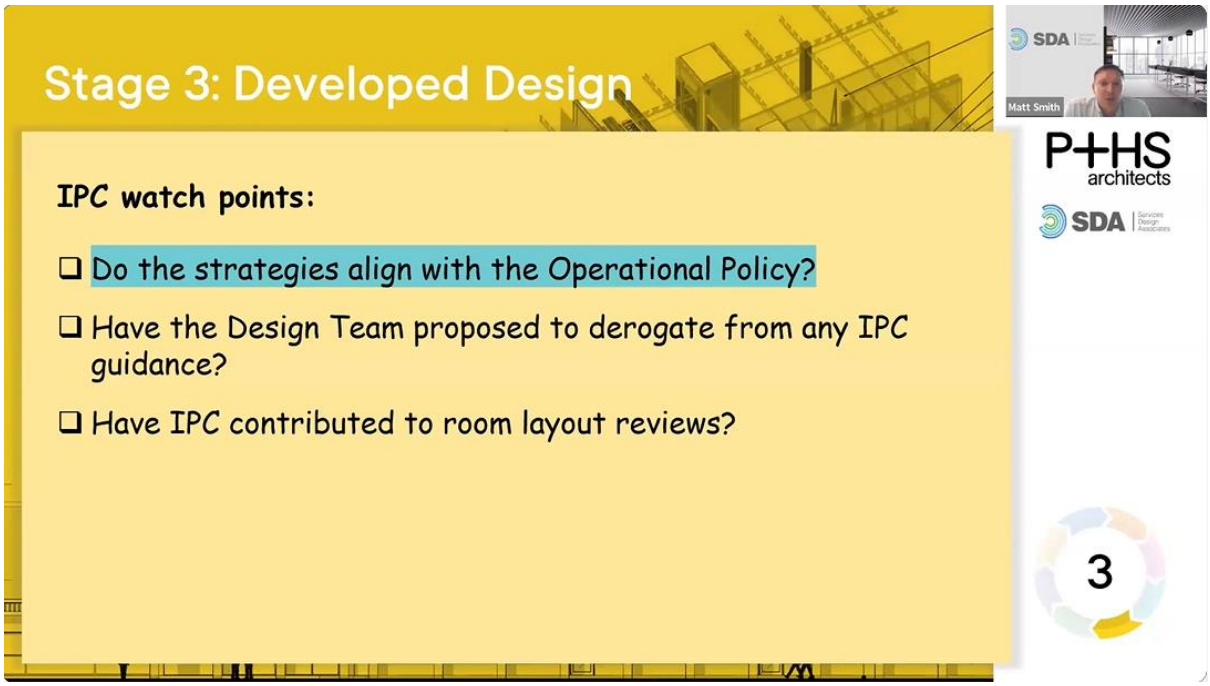


Matt Smith 14:10
Stage two for us is quite a key milestone, at this point we'll have highlighted our design philosophies for our project, and how we're going to look at implementing them. This will be highlighted with a list of derogations, etc, where applicable and where we can potentially avoid taking derogations if needs be. But stage two for us is kind of a line in the sand for us to move forward through into three and four with the further design but we need that engagement early on. We see this time and time again, where we get to stage two, and the authorizing engineers and clinicians and relevant stakeholders and infection control have not been consulted. And we need to run through the design with them to obviously get

them aligned with what we're trying to achieve and to address their thoughts and ideas around it. It's critical to success.

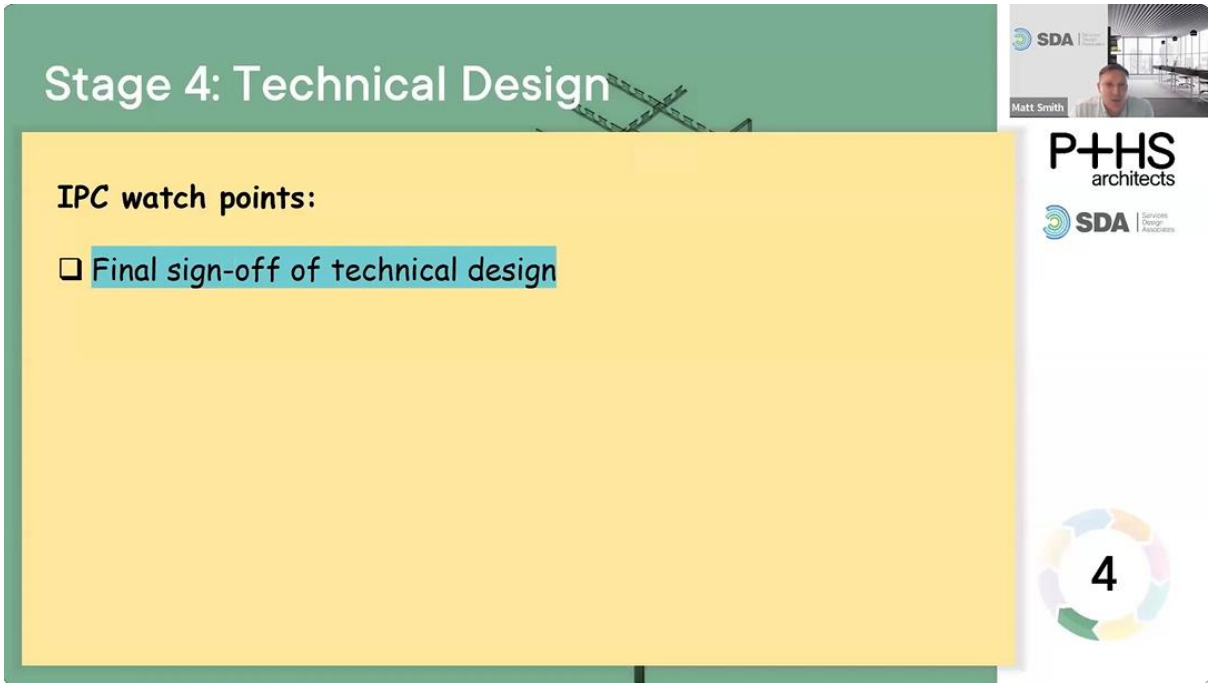
Tom Potter 15:02
So from an architectural side, I suppose it's, it's encouraging IPC and other stakeholders to be actively involved in this design process. So that it's not just looking at specific engineering issues or specification of individual items, it's looking at the bigger picture. So whether the design team and the clinical team have looked properly at clean and dirty routes through a department, is the accommodation there actually sufficient to implement good IPC practice, not just in the specification of particular finishes or anything, but as a whole department, and the room classifications, so if this is the opportunity, if it's not baked into the brief, which it may not be, to really look in detail at what each room is going to be used for, so that we can get clear identification of the clinical acuity of a room, how it's going to be used, how the sort of worst case scenario, so that we can collectively as a wider design team, which includes the trust and stakeholders, agree the specifications that should be implemented in those rooms. Because that's one of the things that is quite often left to later in the process, by which point as we've said, lots more decisions are locked down. And a change, maybe looking at number of air changes in a room, can have a big impact if it's not captured at this early stage.

Matt Smith 16:28
Correct yeah. And from an environmental point of view, we see this time and time again, in the fact that things like treatment, examination rooms, or treatment rooms, etc. And in HTMs, there's clear guidance on what is required within them spaces. Treatment rooms are obviously a lot more kind of onerous in that regard with higher air change rates, lower level extract, kind of, in terms of administering anaesthetics, if I can get my words out right, administering anesthetic gases, a bit of a tongue twister there, and more kind of stringent in regards to infection control. Just the change of name has a big impact. And that's the point that we're trying to make is that it's key that we get that right for the space.



Tom Potter 17:11
Okay, so moving on to RIBA stage three. So, in a, in a traditional new building, this is the stage where you go in for planning permission. So, everything about the external design of a building is locked down at this point. So, there's, again, there's big cost implications, and potentially program time implications if we're making changes to the detailed building design at this point. From an internal point of view, it's really about developing strategies that we're going to then implement in the detailed design of the building. So, it's trying to fix the strategies for fire, for acoustics, for IPC security, ventilation, lighting, all that sort of is captured as a strategy of how it will be implemented in detail.

Matt Smith 18:01
This building services point, generally, to be fair, stage three, ideally should have been highlighted at stage one, which is tied to procurement route. And point being, aside from our point of view, there are two routes at this junction, when we get to stage three. The first is kind of a form of design and build contract that some of you might be aware of, which ultimately puts the responsibility of the design going forward onto the contracting team. And as part of that, we would provide a performance set of requirements and a specification that will go out to the market. The other option is more of a traditional contract in which stage three becomes just a stage gate for us. So similar to stage two, in terms of a signing off process, and so forth, but then leads us to the stage four, detailed design. Ultimately, we need this signing off. And again, like I said, we'd need a consultation with the AES and the relevant stakeholders going through it, including the infection control team.

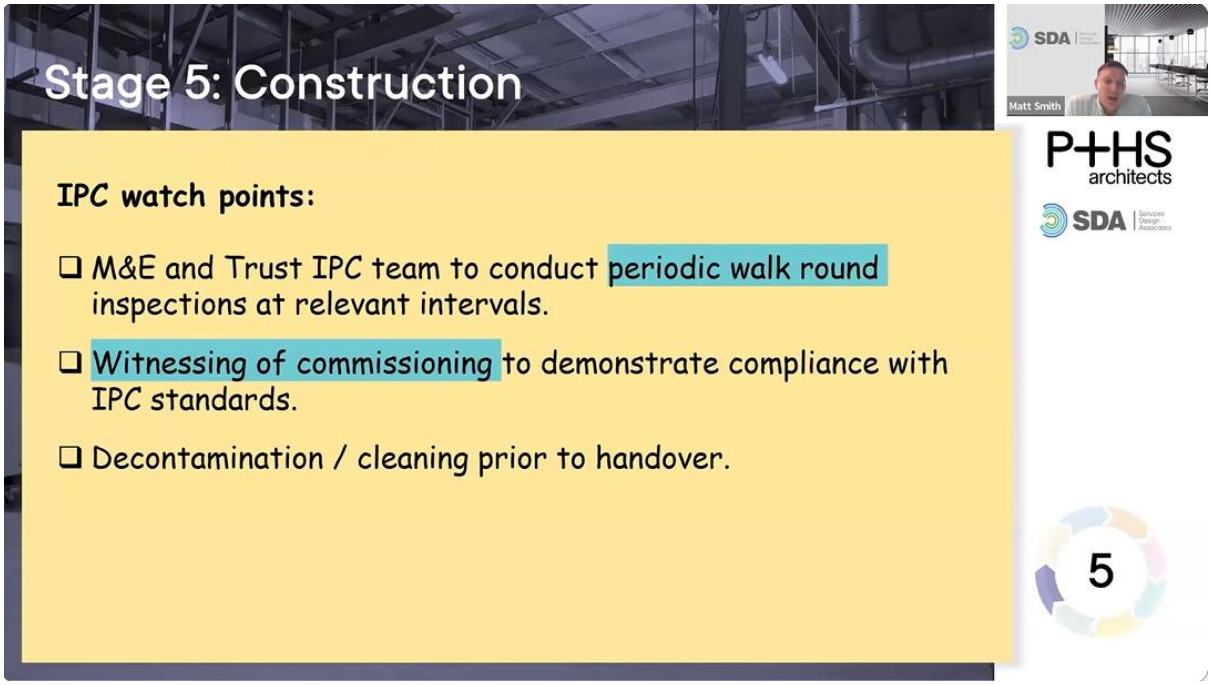


Tom Potter 19:10
So, stage four is getting really into the detailed technical design at this point. So, this is where we're preparing information that a contractor can cost, then go out to the market and find specific products. So, it really is a detailed design. It's an awful lot of work from our point of view, it's a really intense stage

of design, but you'd hope that it's getting into the detailed design. So, it's not fundamentally changing anything. It's resolving everything to a greater level of clarity.

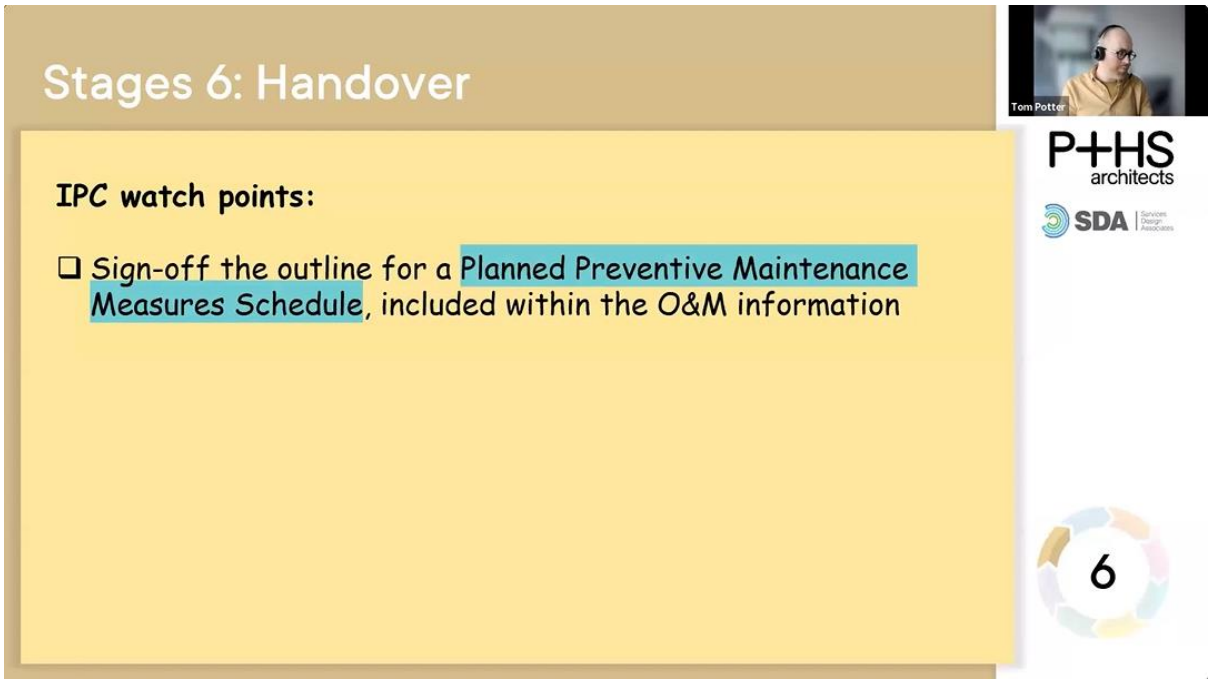
Matt Smith 19:45
Yeah, and again, from our kind of point of view, at this point, we would have all kinds of derogations, all kinds of consultations with infection control and relevant stakeholders, clinicians, or carried out from our perspective. This kind of, stage four, is more than just executing the design on all the agreed parameters that we have worked on throughout the previous stages. Realistically, the sign off process for stages thoroughly, should be kind of more of a formality, and that it just aligns to everyone's expectations of what we're trying to achieve with the project. “Thoroughly”, again that is an ideal world scenario, and the changes do happen at stage four. But the point being is if we can limit these changes during the stage three and four process, it has less impact on budget and program. Because obviously, as in line with Tom's chart, again, as we get into stage four costs and implications of change, have a significant effect on the project.

Tom Potter 20:45
Stage five, we're unto construction. So, at this point, the buildings on site you'll see holding up you'll see steel concrete frames go up for a new build, and a whole load of activity. And at this point, the contractor will be trying to coordinate multiple subcontractors, different trades, all sorts going on. So again, even more so than at stage four, this is a really difficult time to make significant changes to the scheme. You will have foundations in the ground very early on, you will have below slab drainage being installed. And once things like that are in place, they can't realistically or can't easily be changed. Everything's possible, but it's definitely best to avoid. So, by this point, we would hope that basically everything’s signed off and, in an ideal world, everything just runs smoothly.

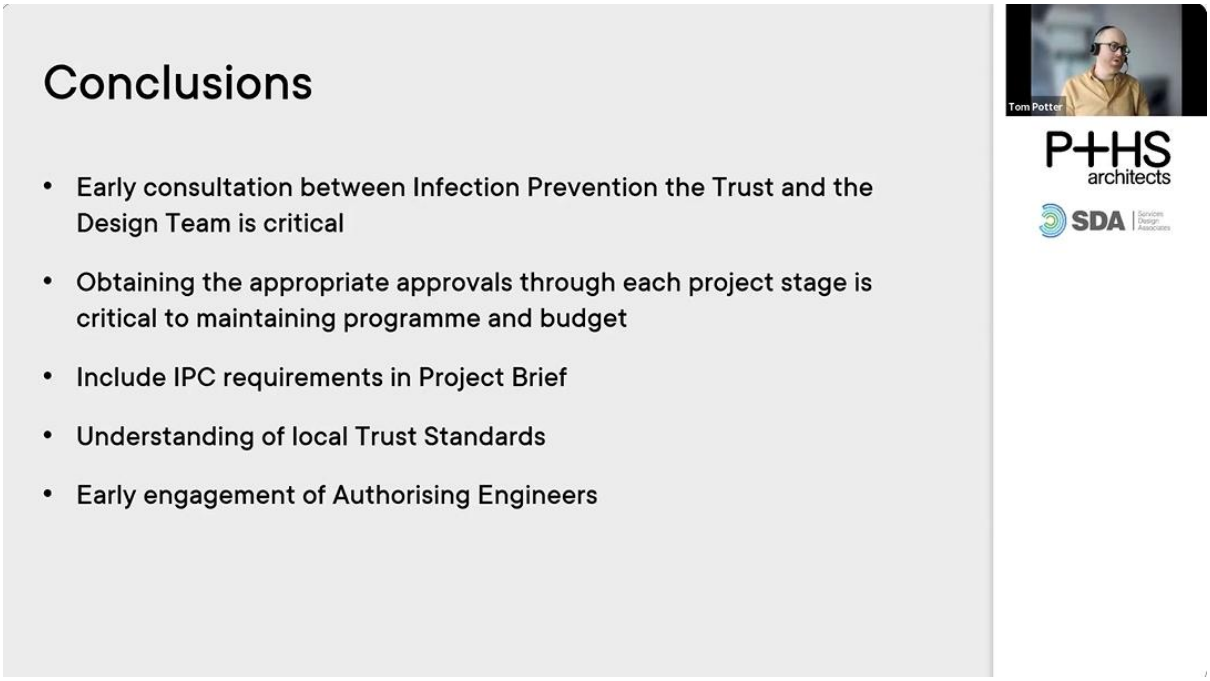


Matt Smith 21:42
From our perspective, kind of M&E and Trust in terms of their IPC team should be conducting periodic all-round inspections at relevant intervals throughout the construction period. This can take the form of kind of any supervisor, technical advisor from the M&E point of view. Just to kind of reiterate on the Trust IPC. It is actually mentioned in the HBN 00-09, regarding the Trust infection control team taking the time to go walk around these sites. The key thing here is that obviously all… everything that we've agreed at the previous stages is implemented on site. And we don't get any surprises later on down the line in the construction process. In terms of witnessing and commissioning, again, this needs to kind of involve all the relevant stakeholders, we need to have the authorized persons in there, obviously, you're going to be maintaining and operating this the systems that we install, and making sure that AEs are consulted through this process as well to make sure that it achieves what we're trying to achieve with the systems in place. That's the key thing on that. Decontamination and cleaning. Now, obviously there is a there's an AE for decontamination. Obviously, that is relates to the cleaning and providing of the cycle also ongoing as well. So, from an operational point of view, and making sure that regimes and things like that are put in place, post-handover to make sure that that facility maintains that clean environment that we're after.

Tom Potter 23:16
So, by stage six, everything's built. And this is handing the project over from the contractor back to the… back to the Trust, and the start of aftercare. So, you'll notice this one is really brief, because if we look back at that graph, all the opportunities for changing anything by this point have effectively gone. And even like stage five, the actions were really about checking that everything is installed as it was intended to be, not about implementing any changes. And that's even more so at stage six.



Matt Smith 23:48
So, this is kind of from our side, signing off the outline for the plan, preventative maintenance measures schedule for the O&M manuals. Now, typically, this should have been considered right through the process, it should have been in terms of developed in line with the standards that the trustor expecting to see, and so forth. And obviously the stakeholder engagement that we talked about earlier, and obviously the AEs and so forth. So for me, this is kind of getting them the contractors input into this and making sure that moving forward post handover, that the trust is familiar with the with the building question or the works in question, and that the systems can be maintained, operated and cleaned accordingly so that they're meeting going in and out.



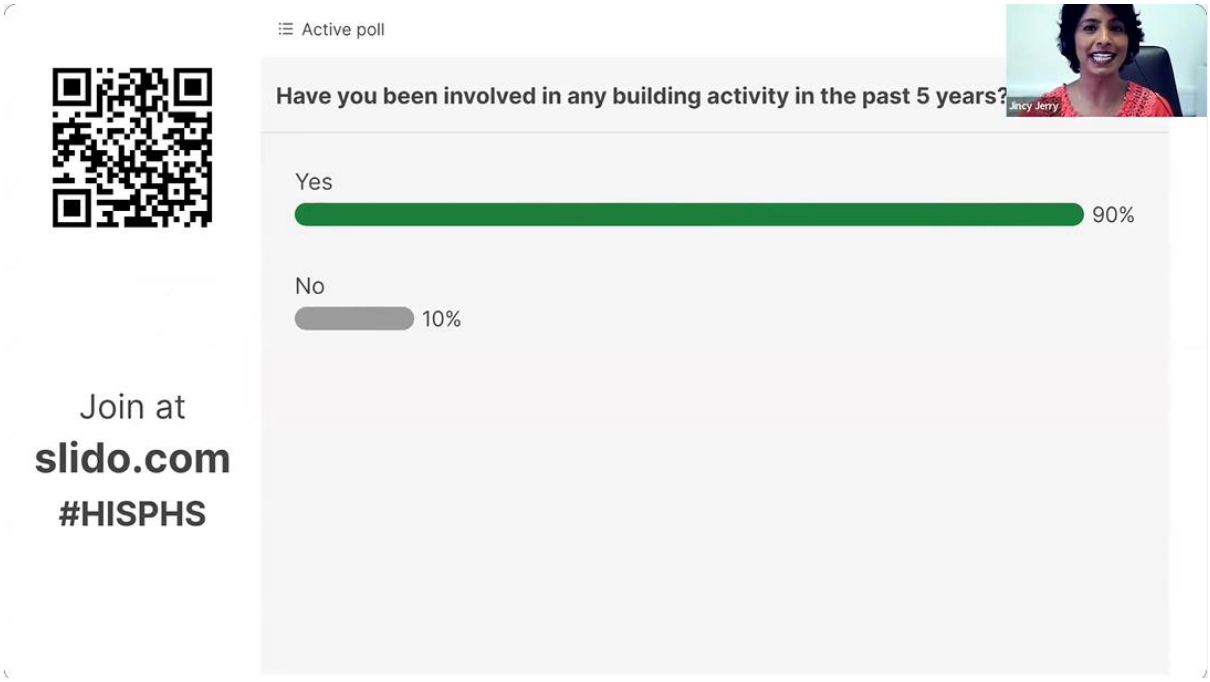
Tom Potter 24:39
So by that point that the whole construction design process is finished. So what we've hopefully, iterated, the essence of this is that early consultation is absolutely critical. By getting IPC requirements locked into the brief, or understood at really early design stages, then the designers such as me and Matt and others can take all those requirements and embed them in the design properly so that we're not completing a bungled work. Or, in a worst case scenario, handing over a building, which doesn't fit the operational policy of the clinical team. It's making sure that IPC have a good understanding of the Trust standards and have hopefully contributed to the local Trust standards. Understanding the discrepancies between the Trust guidance and published guidance, whether that's some sensor taps versus lever taps, or whatever it might be just full understanding and early engagement. And that's us. Thank you very much. Appreciate that it's been a very whistlestop 20-25 minutes. So, if anyone on the call does want a follow up discussion on any of these or a better understanding of that whole design development process, that's certainly something we're happy to arrange. Thanks, David.

Matt Smith 26:09

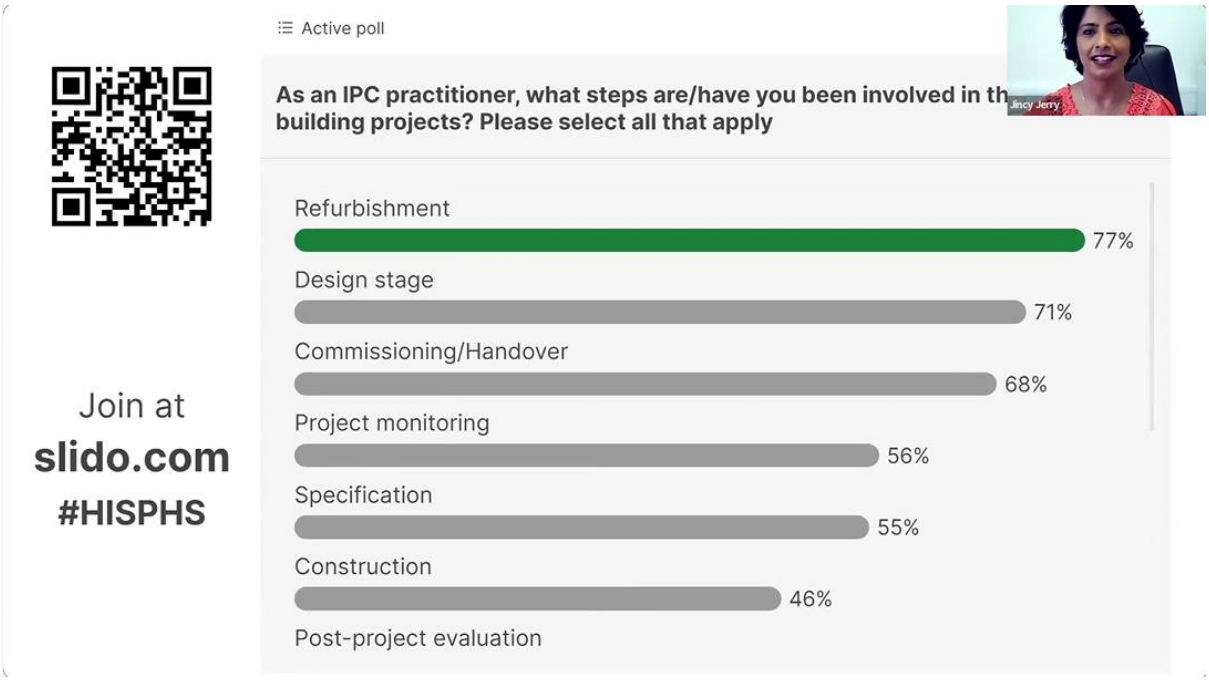
True. Thank you.

David Enoch 26:12
Thank you very much, Matt and Tom, that was fantastic. And that's great. So just to remind people that we'll be having questions later on, but you can submit them in the chat. And then I think, Jerry, would you mind starting your talk? If you want to share your screen as well? Thanks very much.

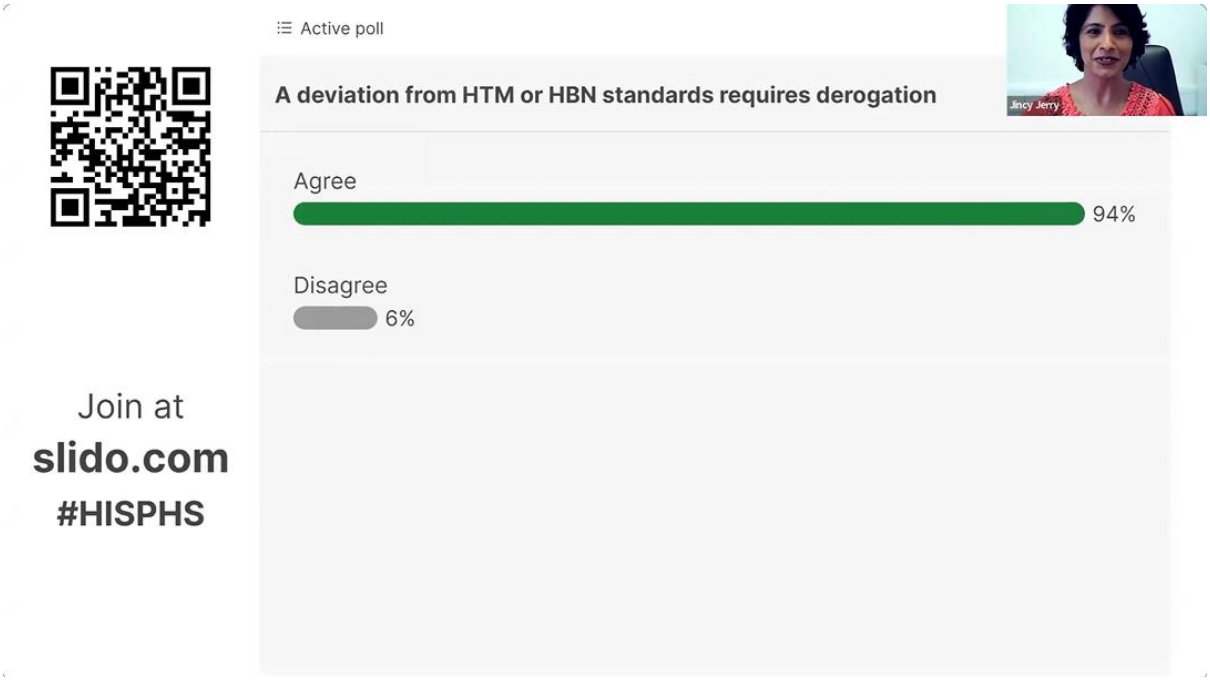
Jincy Jerry 26:31
Hello, David, can you hear me? Okay. So, before moving into the presentation, I would like to know about our audience experience and views about building a healthcare facility. So, it would be great if everyone could answer the next few slido questions. And the first one is to understand your exposure to a healthcare building activity. So, have you been involved in any health building activity in the past five years?



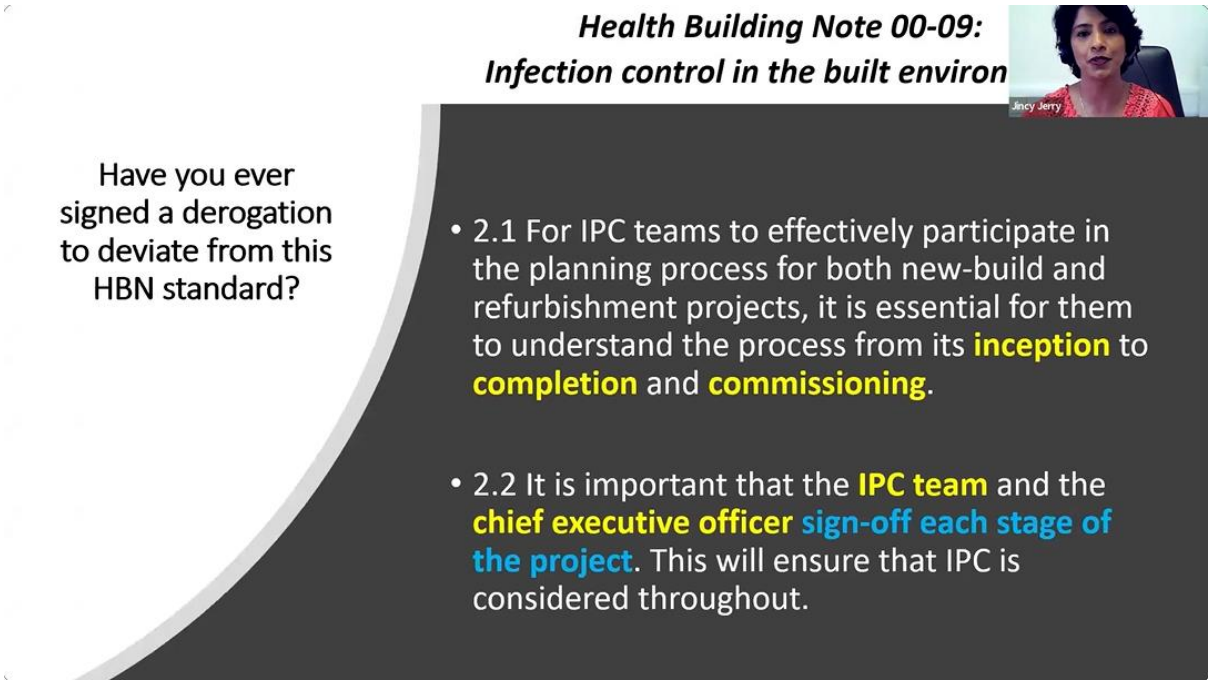
It looks like the majority of the audience have experience. Building a healthcare facility. So, it brings me to the next question to the infection control crew in the audience. So, as an IPC practitioner, what steps have you been involved in the healthcare building projects? So, please select all that apply.



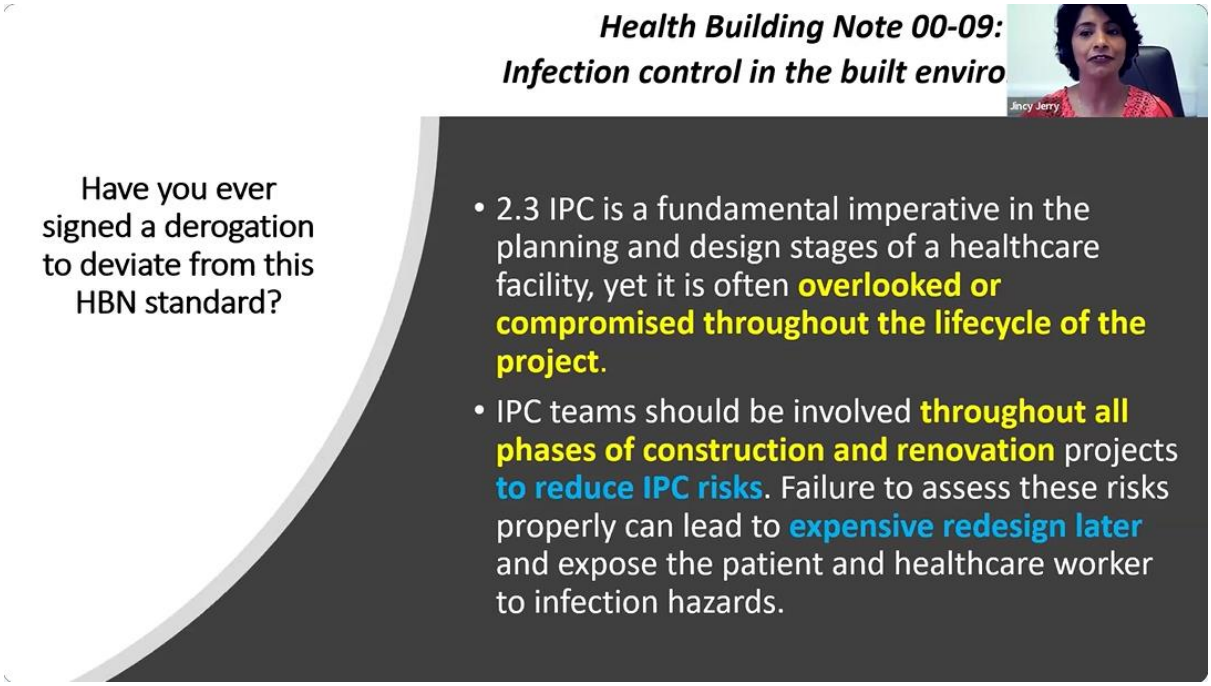
So, you have option to select multiple answers here. Ros, if you would like to scroll the answer down just to see how many people have in the concept and feasibility, to discern contract, as written down. Okay, thank you. And the maximum I think is still the refurbishment and present stage commissioning handover. So it's very interesting to see the various level of education and IPC. There is, as usually expected, that the majority of the IPCs, they are actually involved either in the refurbishment, design stage and then commissioning and handover. So let's go to the next question. Would you all agree that deviation from HTM or HBN standards require derogation?



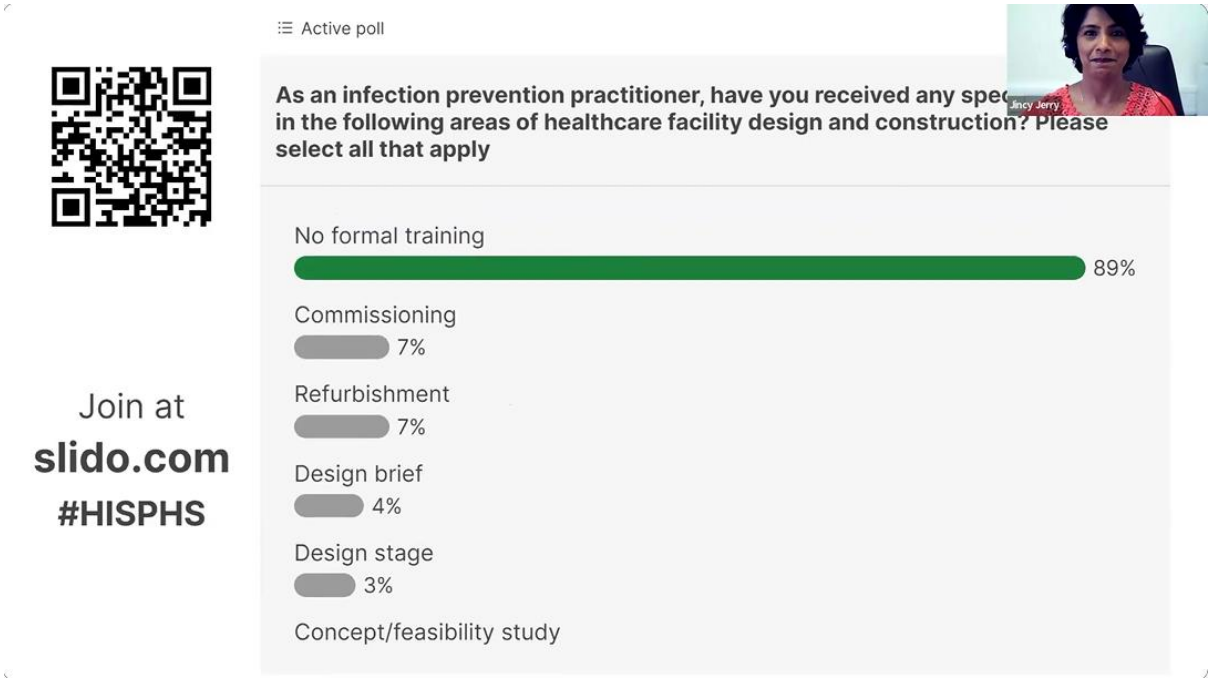
Okay. Majority, again, nearly 95 percentage agree that deviating from HTM standard requires derogation. In that case, I'm going to bring it to your attention to the health building notes and the next slide. And already Tom and Matt have alluded as to the infection control in the built environment HBN 00-09. And virtually, as Matt said, the first page itself gives you a clear identification of infection prevention control and they should be consulted throughout every stage of the capital project.



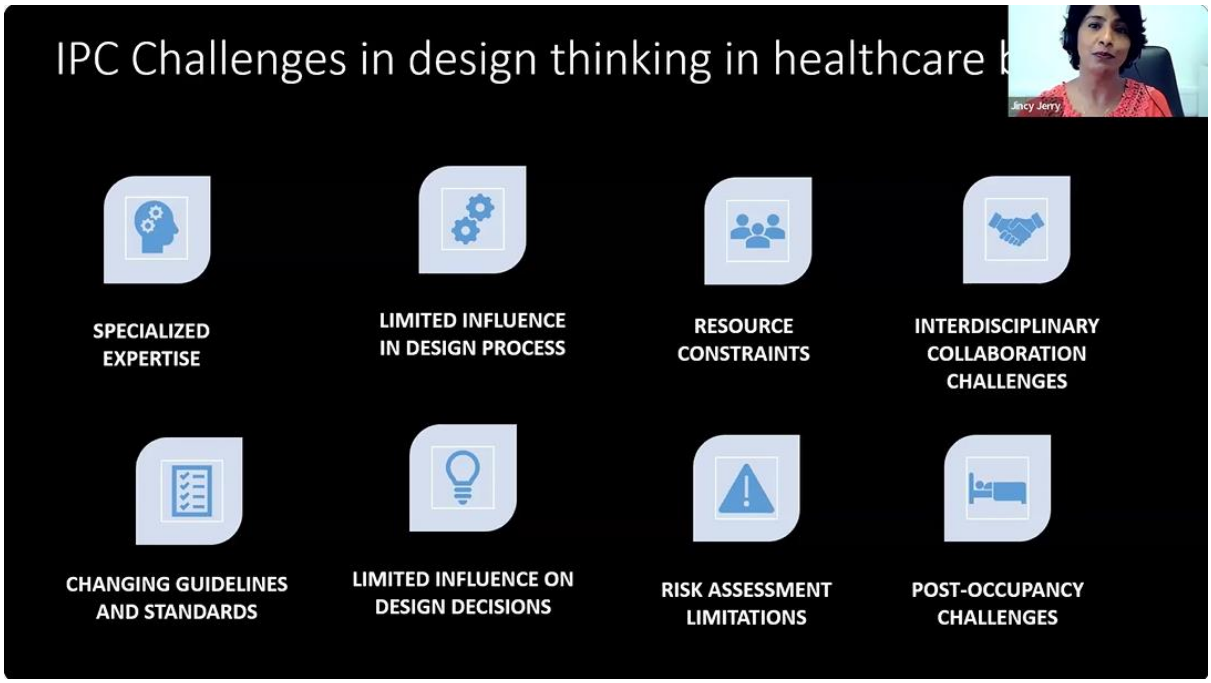
And if you look at the next standards, the next slide shows that 2.1 and 2.2 the standards force specifically that ask the IPC team to understand the process from its inception to completion and commissioning. And it is important that the IPC team and the Chief Executive Officer sign off each stage of the project. Have we have seen deviations from the standard? Have you ever signed a derogation to deviate from this HBN standard? I haven't. So, let's go to the next slide, the next slide of questions.



So, the HBN standard actually says that if we overlook or compromise throughout the lifecycle of the project, it is going to have a risky and expensive redesign later. So, the infection control has a key priority, and it is fundamental to look at planning and design stage of the healthcare facility. Can we get to the next slido question please? Tom and Matt already discussed in detail about the expectation from the IPC team on the different stages of the building work. So in this slide, I would like to know about the IPC colleagues from the audience. Have you received any specific training in the healthcare designing facility and also in construction-related activity?

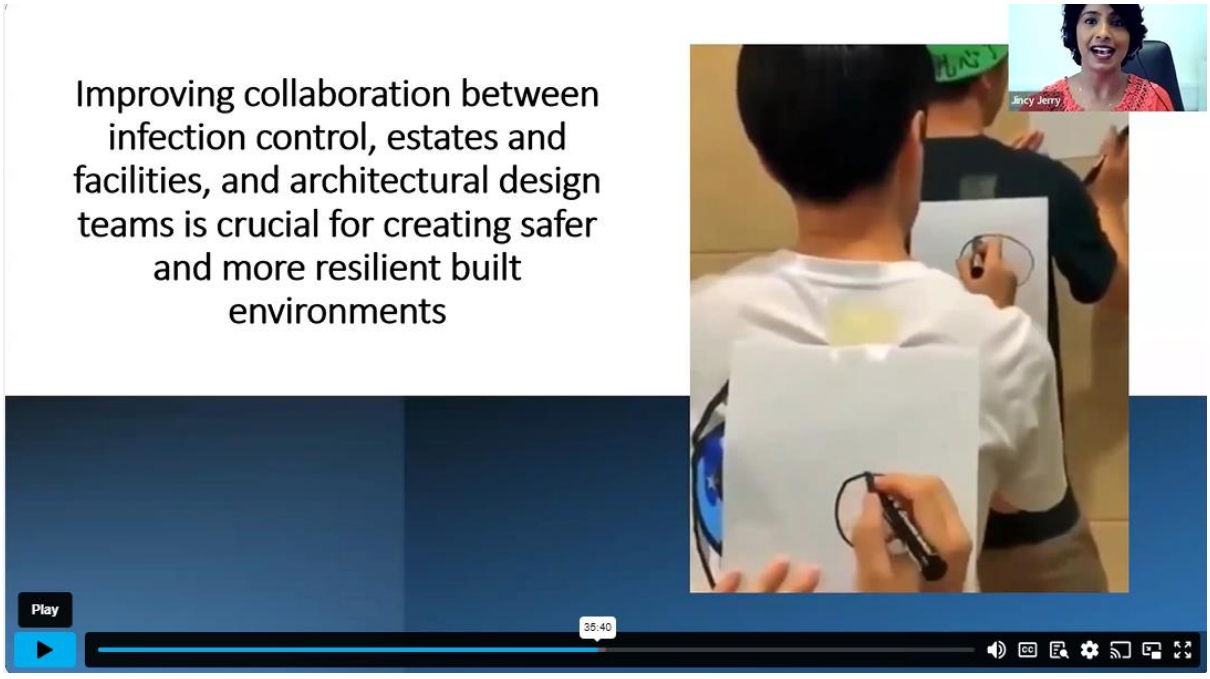


Okay, so whilst majority of the infection control audience of this conference have not received and the only minority and less than 10 percentage received a training Okay, let's move on to the next slide.



So, as noted from the slideshow IPC team may lack specialized knowledge in architectural design and engineering principles. So they have expertise in this field, no question about it, but they may not have the technical expertise required to assess the complex design elements, such as heating, ventilation, air conditioning systems, or airflow management or water system design or risk management system design. Secondly, the infection control personnel may not always have a significant influence on the design process, but because we are brought to the project at a later stage, so the hospital management or architects or designers may have prioritize and other design considerations such as aspects of functionality, or cost effectiveness or the requirement by other key stakeholders or infrastructural departments. If IPC is brought to the loop regulating the next point is very crucial. The infusion of profession may face resource constraints, including limited time, budget and staffing. This can impact their ability currently to review and provide guidance on new hospital designs. So they may be overwhelmed or they are not aware of responsibilities, and leaving less time for an in depth involvement in the design process, even if you have adequate knowledge in this point. And the next one is very evident. The effective collaboration between infrastructure, architects, engineers and other key stakeholders is essential. However, the communication barriers and conflicting priorities and different perspectives among interdisciplinary teams can hinder the collaboration and compromise the effectiveness on each level of guidance. Another point is the guidelines and standards. As we all know, most standards have been in place for at least 10 to 15 years. But infection prevention is constantly evolving in response to the emerging pathogens and technological advancements and less and less from previous outbreaks. We cannot underestimate the value of it. But I can tell we are lagging behind. Most often we face the challenges today from the existing standards because at times, our applicants, engineers and investor businesses don't want to move away from the existing HBN standards. Another

challenge is that the infection control person may have limited influence on the design decisions that are already made by healthcare administrators. Their recommendations may or may be overlooked or disregarded if they are perceived as conflicting with other priorities or objectives. For example, there is only a limited space to begin with a building project. Next major limitation is the expensive risk assessment. While infection control can identify the potential infection risk associated with the hospital designs, they may not always have the expertise or resources to conduct a comprehensive list assessment or simulation to evaluate the effectiveness of a proposed design solution if something is proposed a new value that hass not existed before. Last but not least, even if IPC personnel provide guidance during the design phase, ensuring that IPC measures have been effectively implemented and maintained after the hospital is built can be challenging. So, the ongoing monitoring, training and quality assurance efforts are necessary to address the potential gaps in infection control practices post occupancy. So, the next slide.



What is the key here is the collaboration between infrastructural personnel, architects and engineers and other key stakeholders. Improving the collaboration is crucial for creating a safer and more resilient built environments that prioritize the health and wellbeing of the occupants. Each team brings unique expertise to the table. Additionally, and more when the stakeholders from very early stages of the project can ensure that the infection control considerations are integrated into the design from the process inception and to the outset. If we failed to collaborate at the end of… at the beginning, the end product won't be the same as we decide to have it in the beginning. Here are some strategies to enhance the collaboration among the stakeholders. So next slide, please.

First of all, facilitate a regular meeting or workshop where representatives from each team can come together to discuss the ongoing projects, share insights and address any concerns related to infection control, facility management and architectural design. This ensures that all parties are aligned on the project goals and requirements from the outset. There are architects and engineers on this poll. If you haven't seen infection control for your project, please ask for them. Sometimes, IPC is not contacted. Next is to engage an integrated design approach that infection control measures are incorporated into the architectural design process from the early stage. This is all to be discussed in this one. This includes concentrating factors such as ventilation systems surface material or layout of optimization for the flow of people, or access to hand hygiene facilities to minimize the risk of pathogen transmission. The third point is to provide cross training opportunities for team members such as something like this across disciplines to enhance the understanding of each other's roles, priorities, and challenges. This fosters a culture of collaboration and mutual respect, enabling the teams to work more effectively towards the common goals. Next is to organize the interdisciplinary workshops and simulations to explore different scenarios and test the effectiveness of efficient IPC measures within the built environment. This hands-on approach allows the team to identify the potential gaps or areas of improvement very early in the design process. The fifth point and I love this point is to leverage the technology and data driven solution to streamline the collaboration and decision-making process. For example, bring something like building information modeling or virtual reality simulation, which can help to visualize the design concept and simulate the impact of the design decisions on impressionable measures that candidates can provide the insight into occupant behaviors and risk infection factors within the facilities. The next step is to define clear goals and responsibilities for each team member involved in the project to avoid the confusion and ensure accountability. This includes, like, deciding the infection champions who is responsible or who will oversee the implementation of the relevant measures and serves as a point of contact for collaboration. So you know who is the go to person for that particular building project. The center point is to establish a continuous feedback loop where stakeholders provide input and feedback throughout the design and construction phase. This iterative

approach allows us to do adjustments to be made in real time, ensuring that infection control requirements are met effectively in each step. And finally, document the best practices, lesson learned and successful case studies to facilitate knowledge sharing and continuous improvement across the team and all of the project. So, this represents information services, invaluable resources for future endeavors. Next slide, please. So, let's not just build hospital for today's need. Instead, design a safe and resilient hospital for tomorrow's challenge. Thank you.

David Enoch 40:09
Thank you very much Jincy. Marvelous. Thank you. So I think hopefully, we'll be getting some questions through the Slido thing. I wonder if I could start off with a question. So I think you've all mentioned that we need early infection control input. And one of the things that Jincy you mentioned is resources. So I've been involved over the last 10 years or so 15 years in sort of minor works like new operating theatres and things, and new Ward blocks. But then about three or four years, during the height of the pandemic, I was asked to my opinion on a cancer hospital, which is 80 beds, and then immediately after that on a children's hospital, and they insisted on these weekly three hour meetings for each one. So that's a day out of my life, wiped out just with meetings, I just wonder how much resource Do you think we need? And how do you? How do you get help? I think, because I'm worried that other people who are listening might be a bit worried. Alright, you know, if you suddenly get something dumped on you like that, because I couldn't cope. And that's probably why I'm interested to be honest.

Jincy Jerry 41:12
My experiences start different than from yours as well. So we are building buildings after building. So what I requested even the beginning of the project, even in the beginning of design brief that you would need an IPC allocated. So if a project comes with a business funding, and that's why it is important that you understand the funding aspect of the building, and put forward the IPC requirement pre buildings, so that you can allocate the time for it. So every building project that comes for example, we are doing a massive building project currently, and I have already put forward the business case for IPC requirement, pre building phase, and then that person will be taken on to continue the building project. So early involvement very early in the design brief or very early in the inception period is important. And that can only happen if you're if you know that the building project is happening. And probably close contact with the estates and facilities and the hospital management is key here. And you clearly have to demonstrate that how much hours of time need to be dedicated to go through the design brief, go through the designing stage, go through understand the design, give the recommendations on changes that is in the drawing. So everything needs to be captured. And probably from our own experience, we will know that you need three or four hours a day to be allocated for this project. So I would say put up solutions very early in the stages.

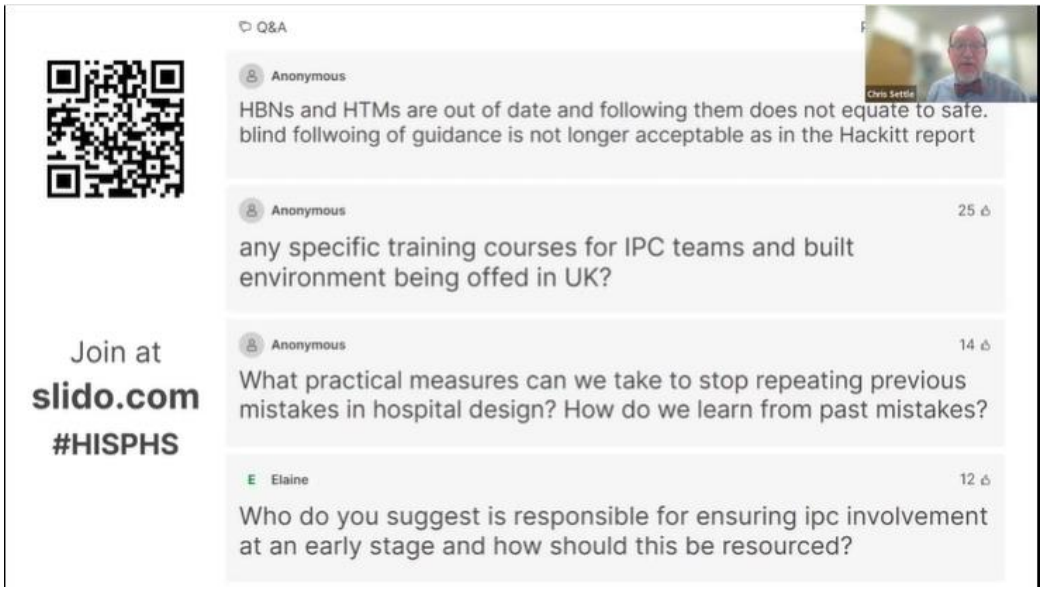
Matt Smith 42:57
Yeah, just to follow Jincy’s input the kind of that dialogue early on between kind of infection control and so forth. With the capital estates teams needs to be undertaken early doors could even be considered kind of outline strategic business case, as that develops. And then obviously, as funding and things like that comes through, people are aware the scheme, we can start to roadmap, a bit of a timeline program

out so that you've got bit more of a forecast of what their commitments are from an ICP point of view, as they leave forward into the project.

Chris Settle 43:33
I think the point that David raises is very, you know, valid, because as far as I've experienced, and it must be the same in Nottingham, that when it's going to be a new project, whether it's a small project on a ward or whether it's a new hospital, there's just the expectation that the IPC will being injected from the resources that currently exist in that department. I don't, I've never experienced a situation where, at the time that the project is being conceived and designed, there has been a cost placed into that project to allow, when you've calculated the time it will take for IPC nurses and other other individuals in the in the IPC team, how the resources to supply that extra capacity will be received by the apps department. So in other words, we don't receive anything, you just get a request to assist, but no additional funding to actually employ somebody to assist your department to deal with that workload. So in other words, you basically have to absorb it and that probably means that other things that you would be doing will be done less because you can't you know, there's only so many hours in the day. So it's getting that change to the way that that project is kicked off in that the organization that's deciding to build somewhere appreciates from the start that it will have a ramification on IPC and we better calculate what the ramification will be, provide them with sufficient resources to allow them to deliver that requirement, instead of just sending them an email saying, by the way, there's a meeting, it's every week, it's this many hours, get on with it.

Matt Smith 45:24
Yeah working with clinicians, and managers, things like that, we fully understand that you've got day jobs to do as well as manage them on top of these elements with a construction project. But like I say from our point, if we can get that early engagement up front, it kind of from a timeline perspective, it sets the scene and we can start to look in its scheduling appropriate sessions that work for everybody, rather than being thought about last minute and then having to literally kind of drop everything to undertake, and it gives us that bit more strategic approach.

David Enoch 46:01
Yeah, I think that's great. I think that most of the my experiences were at RIBA stages two or three at best, I think. Yeah. And then, I mean, the most recent one, I was asked to commission a new clinic last week, where they had carpet in the main entrance, and a non handwash basin in the same, it's just absolutely shocking. So that's my level of the thing. And I've been infection control doctor about 10 years now. So most people know me, but nevermind, we probably should go to the questions. The first one here is a suspect it's more of a statement. HBN and HTMs are out of date, and following then does not equate to safe. I think that's probably true. And then blind following of guidance is no longer acceptable, as in the Hackett report. I don't know whether any of you want to comment on that. I'd probably agree with it.



Chris Settle 46:51
I could comment on it in the sense that, I know, sense a sense where the questions come from. But as we understand different, you know, risks that develop in the healthcare setting, then our ideas change about what's important. And for many years, we've thought that it's crucial to allow handwashing at every single opportunity and consequently, increasing the number of available hand wash basins must be a good thing. And that is the tide is starting to turn on that belief, quite significantly, with the information that comes out of outbreaks that have been traced to hand wash basins in health care settings, some of which have been extremely, you know, severe. And in order to try and control that risk. We're starting to think differently about what to do with access to hand wash basins. Do you even need hand wash basins? And where exactly are the crucial and where aren't the crucial. And if we're thinking that, which is a brand new strategy in the last few years, then if you imagine the supertanker of the NHS or health care settings, trying to turn them around from what we've been telling them for 20 years, is not an easy thing to do. And that's going to be an interesting and challenging piece of work for us over the next maybe five years, if we're going to try and move towards healthcare delivery, without so much reliance on water. But but the design of the building and how it's initially installed, and whether the water is even safe from the day one is another factor. That is something that we still have to get right and and even though we know that's a risk, it's happened many, many times, after we've already highlighted it as a risk. So there's still some work to do in terms of intervening in the early stages of the design project and ensuring that the engineers and that the contractors fully understand that you cannot put water into pipes and then leave it there has to be something done to prevent biofilms forming as soon as there's water in the system. And that's something that we really haven't got right yet.

Tom Potter 49:16
So from from an architectural point of view, when we're looking at it, we know that across the suite of HBN and HTM documents, they don't fully align with each other. So it's not possible to blindly follow all of them and get every end and with no derogations. So there's always a discussion to be had about where you're deviating from specific bits of guidance, you might be deviating from one to comply with another or it might be a matter of interpretation and how we're going, what assumptions have been

made along the way. So HBN-009 in particular is is written to sort of describe the process you should follow and very broad principles. It doesn't get into specifics in the same way as some of the other HBNs. At the same time, you've got HBN-0010 which looking at finishes within a room. And that will set out a flowchart, which on the face of it looks very logical and easy to follow that you, you decide whether a room is light clinical or moderate clinical and pick the finishes that it gives you in the table. But the reality is it only gives one example of a light clinical room one example of a moderate clinical room. And after that it's interpretation. So it comes back to that earlier engagement and really being clear about what the operational policy for the department is how rooms going to be used. So that collectively you can agree a specification for a room that everyone's going to be happy with.

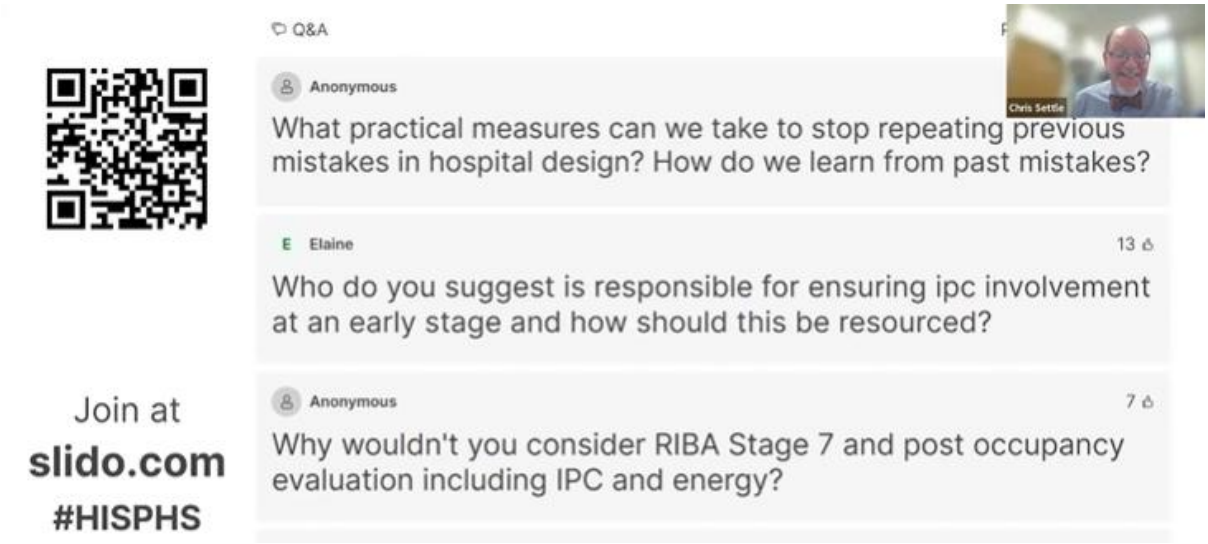
David Enoch 50:42
Thank you very much marvelous. The next question, I'm not sure the answer to this. Any specific training courses for IPC teams and the built environment are being offered in the UK? Do any of you know any?

Jincy Jerry 50:54
I can take that question, David, I saw this question coming up in the Slido very early just in the beginning of this, this presentation. So infection control courses are there like a master's in infection control, and possibly the Diploma in management or in UK, Ireland and in Europe. But none of these courses have full reference to or some of them have no reference at all to any building, healthcare facility, or if they have some information, it is not up to the extent of knowledge that would require you to build a facility to future proof for all tomorrow's problems. The two courses I really attended that I felt that was really useful is engineering aspects in infection control that is run by Healthcare Infection society. It covers a lot about building the designs around classification, different ventilation strategy, theater and decontamination, and probably regulation, details and decontamination in particular. So that's run by healthcare infection society. And then the second course again, run by healthcare information society on water safety and healthcare. Both courses allow you to learn from experts who

managed issues and challenges in the healthcare building. Other than that, I haven't seen any formal education.

Matt Smith 52:22
Just following on from that kind of what Tom, and I mentioned earlier is if anyone has any specific questions, or would like to go into anything further from the environment, you're more than welcome to contact us.

David Enoch 52:35
Yeah, I think I'd like to have a phone a friend. What practical measures can we take to stop repeating previous mistakes in hospital designs? And how do we learn from past mistakes? I think that's what we're trying to address with this, to be honest, and we're trying to get the conversations going. So I think we tried to do our bit. And I think we'll try and do to do more. To be honest. I don't know whether anybody on the panel can add to that. But I think the more we talk and speak to nice engineers and architects. Yeah, I think it's really helpful.

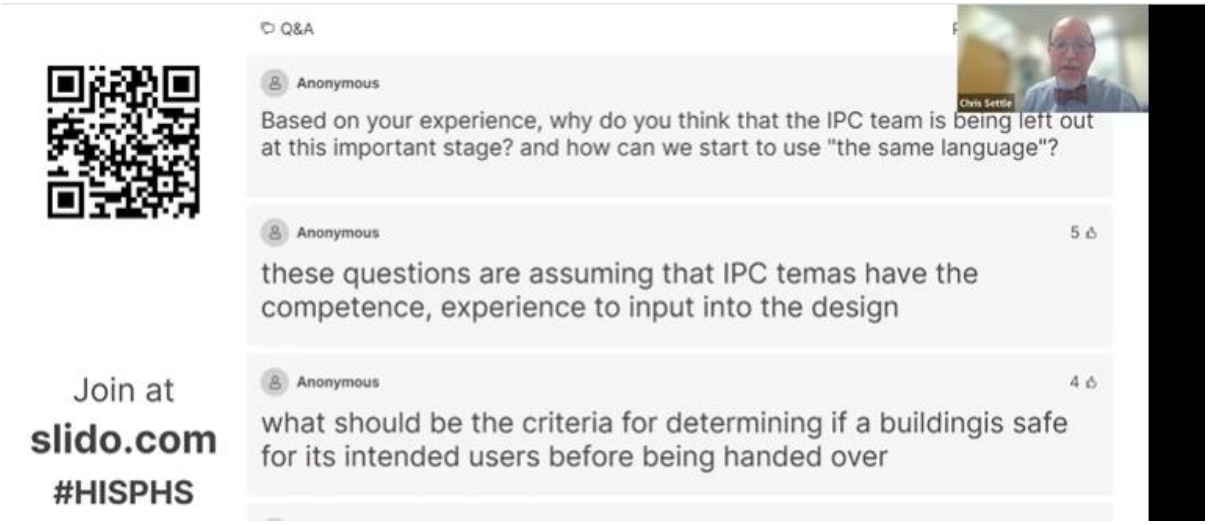


Tom Potter 53:21
There's, there's a comment there on RIBA stage seven and Post Occupancy Evaluation, I think that that sort of feeds into this conversation that we've, we've been talking here about getting really early input into the design and briefing for a new development. But a key part of that process, which we've skipped over in this presentation is Post Occupancy Evaluation, it doesn't happen often enough, should happen more because that's where you gather the information and get the lessons learned to feed into the next project at those early stages. So if that hasn't happened in recent projects, it doesn't stop you looking at lessons learnt, internally from an IPC point of view on any schemes that you're aware of. And gathering that information so that you can feed that back to the design team on future projects.

Chris Settle 54:07

Yeah, the other thing I was gonna mention was that getting a good relationship, fostering a good relationship with the Estates and Facilities department in your trust is, is quite an important way of potentially then being tipped off early toward to the fact that there might be work in the pipeline. And you know, there are already arenas where our paths cross water safety, ventilation, decontamination, we have infection control meetings where a senior representative from estates is present. We recently had an infection control planning day where representatives from estates facilities, pharmacy nursing were present at the planning day so they get to see early what is the direction of travel, what are we wanting, what are the challenges, what are we trying to achieve? And they take away things that they didn't know from those kinds of encounters. And it helps you to build a relationship with those people of trust so that then they will, you know, not want to keep things close to the chest, because they dare not send you the plans early in case you scribble red pen all over them. But it's important that early discussion occurs. And the less red pen that you you know, the earlier you hear about it, the less red pen is likely to be getting written, I suspect.

David Enoch 55:31
So I think that sort of answers Elaine's question, I think that I try and talk to people in the estates, and minor building works and things like that. But then when there's something like a new Cancer Hospital and stuff, then you're in trouble, really? Where are we now? What practical measures? I think we've tried to do that. Based on your experience, why do you think that the IPC team has been left out at this important stage? And how can we start to use the same language? Can anybody help with this question? I think I think why it's been left out, I would have thought it's probably ignorance, to be honest.



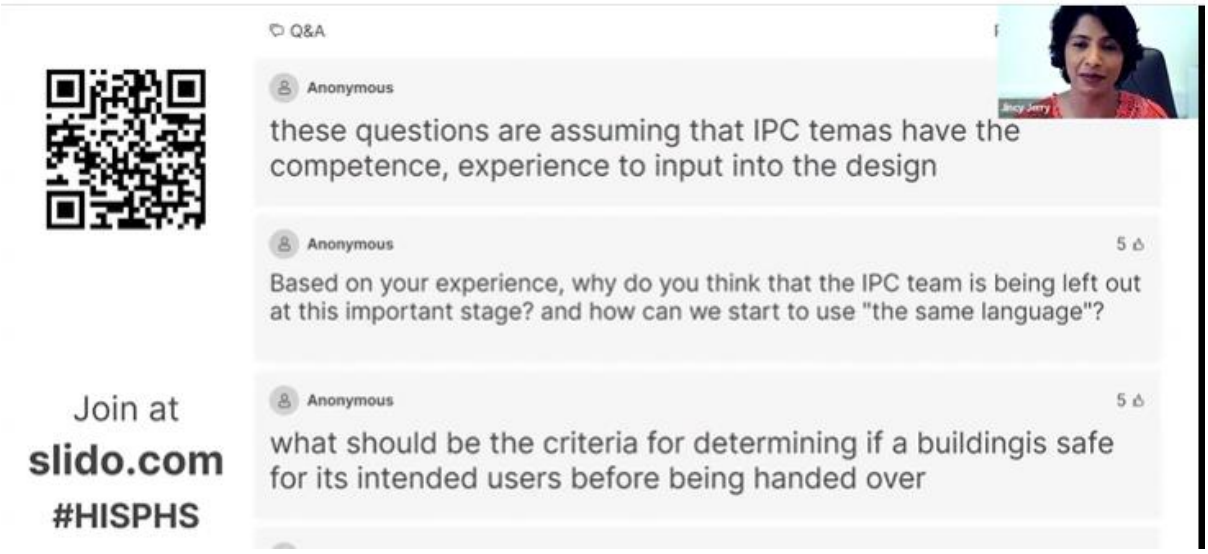
Matt Smith 56:13
I would agree with that and I think that with all the variables that happened within a project with its the funding and timeframes that needs to be completed by to getting design teams on board and to get the scheme moving forward, thinking somewhere when the translation of it all does what is one of them

elements that seems to get missed, now that mentioned so that it's not just about infection control, getting AEs on board in the right timeframe. Again, that's something else that only seems to be getting a feel about later on down the line when the question’s asked. And at that point, it always seems a bit too late. And that's the same with infection control. So as we say, I think a bit more of a standardized approach, leading to the previous question a little bit will be helpful in terms of, you know, almost kind of like a checklist in some form of sheet so that, you know, all capital teams or kind of project managers, etc, have a bit of a list to make sure that they've kind of implemented through any project, whether it's a gritty refurbishment to a new hospital, the process should ideally be consistent.

Chris Settle 57:13
Yeah, I think there's not a habit yet necessarily everywhere of organizations thinking of this early. And whilst the checklist may help to alert them to this and make sure that they actually ask the IPC about about what's happening. It won't do any harm for IPC professionals, also to be continuously questioning what is going on? Is this something new? I've heard rumors about this, that or the other please, can you tell me more so and eventually, we will form habits that are better, in which the organizations routinely initially right from the very start involved involve IPC.

Jincy Jerry 57:48
I think the standardization of the process needs to be there and every hospital and majorly you need to be a part of strategic project development committee of the institution. So if you're in the, if you are in the strategic project committee, you would know every project that is going to be there, that is going to be built in the next five or 10 years. And you can actually put input very early from that time onwards. Okay.

David Enoch 58:21
I think that quite a few of the projects that I've been involved with have changed over time as well. So we had a COVID surge capacity building, it was supposed to have 300 beds, it went down to 60. But yeah, so but it is, I think that your strategy project thing sounds a good plan, to be honest. These questions are assumed the IPC teams have the competence experience to input into the design. I think that's true. I think we do need training. And I think we do need to have phone a friend. And I think that I the way that I've got experiences by doing small projects, like a new operating theater, or new operating theater complex, and then gradually build up, and you sort of learn from your mistakes, and you ask local friends, and when they don't know you ask friends further around. I've never had engineering friends or architect friends. So it's lovely to meet you too. But I think it's about how we keep on talking and communicating.



Jincy Jerry 59:16
it is very important that we learn from our engineering colleagues. I'm trained by an architect and an engineer, very early in my career, and probably that's how I built knowledge around this. But it is important that the IPC collagues across the world, though, but to do because they can't do phone a friend all the time. So developing a course or a curriculum that can help the infection control professional where the engineers and architects and electrical engineers, cant teach them thats probably the most appropriate way to go to

Matt Smith 59:53
Yeah, and likewise, to be fair, from a trust perspective, they've got their APS they've got the relevant people as specialists within the services that we talked about earlier, from an engineering perspective, there's no reason why they can't be in dialogue with the relevant infection control individuals to kind of share that knowledge and just help with that process a little bit because, but from a design team perspective, that might just be one particular project and they're gone, not seen again, as the people within the trust are there for a duration, obviously, a longer duration, so that having that dialogue between them two parties, I would say is quite beneficial.

David Enoch 1:00:33
Yeah, I think that's absolutely true. And certainly since COVID, I've got to know my ventilation people very well. And I knew my water people very well before that. So yeah, that's important. I think there's an interesting comment about the University of Highlands and Islands have a distance learning module. I think that that's really useful. So thank you, whoever that was anonymous person. I think derogation can be an improvement in safety. I think you're absolutely right. And I think the HTM says you're supposed to have two sinks in a 4-bedded bay. But we removed one of the sinks because we didn't think that you needed two sinks. And I'm just gonna, I'm slightly conscious of time, because we're supposed to finish it two o'clock.

Matt Smith 1:01:13

From a derogation point of view, yet, majority of schemes will have derogations. We see every now and then that some of these HTMs, HTMs conflict, we see British Standards, for example. I would rather derogate against the HTM and HBM rather than a British standard. So from that point of view, there's these elements as well, because they don't align perfectly. There are supplies Tom’s alluded to earlier, that there are sometimes inconsistencies and we then take a view on the priority of it.

David Enoch 1:01:50
Right, I think we probably should wrap up and I'm having three consecutive meetings on in my office. I'm afraid so nobody can hear me. I think thank you very much. I think I should say thank you very much to all the speakers and panelists. So to Matt and Tom, Jincy and Chris, to everybody from he is at Ros and Ruth and people. And thank you for attending. I think that certificates of attendance will be sent out in the fullness of time in the next few days. But thank you very much. Sorry for the for the quick thingy but it's five past two, and you've probably got ward rounds and important things to do. Thank you very much.

Matt Smith 1:02:27
Thank you, everybody. Thank you.

Tom Potter 1:02:29
Thanks very much.