The following is a transcript of an interview with Justin Green, Set Construction Manager on Company B's 2005 production of *Stuff Happens.*

The set for *Stuff Happens* was designed by Brian Thomson with costume design by Jennifer Irwin.

And what is the role of the construction manager?

I guess the key role of any construction manager is to work with the designer and the production manager and the production crew to realise in the best possible way what the designer has created … so the role is really to take your technical knowledge - be it of carpentry, welding, engineering and try and create … whatever the designer has come up with on the model and in the plans.

What brief are you given at the beginning of your role? You mentioned plans, you mentioned a model box - could you give us a bit more detail about what you were given?

The first stage would be what we call a white card model which [has] no scenic art on it, no texturing or anything like that … just a simple guide made out of white cardboard as to what the set is going to look like proportionally … we don't actually measure it at that stage or do anything like that … it's really a costing for materials … and logistics of it, whether it'll stand up. We start to think at that stage what we'll build it out of and how it will actually be built and discuss the options for surfaces … colours that it may be and … the way the set design will then lead.

And do you have these discussions with the set designer?

Yeah, on the whole what will happen is that the designer and the director will obviously get together and knock heads and work out the direction artistically they'd like the set design to go and then once they're ready … then they do the white card model which will primarily be for costing and to just start the ball rolling … so we'll have a meeting with the designer and possibly the director but sometimes just the designer and then from there he goes away and makes a full model which would have all of the scenic elements on it …so all the painting, all of the wallpapering, colours, movement, basically a miniature version of what he or she would like the final set to look like and … they present that to the general company [the theatre company ie. all administrative and production staff] as such and that's when the work starts, that's when we start to really knuckle down and work out exactly how we're going to do it and break it up into the various components that will make it up.

And with *Stuff Happens* and the set for *Stuff Happens* what materials were chosen to construct the set and who made those decisions and why ?

I think Brian [Thomson, set designer] was fairly certain when he started building the model that he wanted it to be made of cardboard … he wanted a crumpled look, um, a very fragile look in that it was a suggestion of the World Trade Centre after 9/11 rather than the *actual* 9/11. If you look at the photographs of Ground Zero, of 9/11, afterwards, it was actually very, it's actually quite different to the way the set ended up …

… Brian wanted cardboard as such and then really it came down to Trevor [Company B's Production Manager] and myself sitting down and [thinking] well, if we are going to make this out of cardboard how are we going to go about doing it because it's an enormous structure - I think the finished structure at its widest is about 24 metres wide and it's about 9 and a half metres high and we had to make that so that it was physically strong enough to stand up by itself with some small amounts of rigging and yet robust enough that it could then be packed up, put in a truck and sent to Melbourne and put up again.

And I guess that begs the question how *did* you make it robust enough to stand up in the space and also to achieve that sort of tangled effect which strikes you when you look at the set?

There were several models that we did of that, several samples … as soon as I saw the set [design] the first thing I thought of was … those rubber figures that you used to play with as a kid where you bend a leg and it had a piece of wire in it and it just stayed put … we used to make some incredible pipe cleaner things … and … when I did a bit of animation work with Claymation and with various wire animation, um, that seemed to lend itself straight away to that, but [we had to] check it out, to test it, to see what sort of memory we could get out of the cardboard because that was going to be the key … how thick we were going to have to use the cardboard, how many layers we were going to have to put together … Several ideas came up of making each structure solid cardboard and then twisting it from there. I felt that this would be really difficult to do because once it becomes solid mass you've got to do a lot of work to then twist it and bend it [but] we tried [it] and we tried some foam ideas and eventually I just kept coming back to this idea of mine of these metal figures and decided that what we would do is create what I call a pipe cleaner model … in that we put a steel spine up the back of each upright piece that was about twenty five ml boxed section … it's about 1.6 mm thick so that although in your own hands it's quite sturdy and strong, structurally it's quite flexible … so what we did is that we created a map of the entire model because there wasn't really any drawings of this model because it was such an organic piece … Brian was constantly twisting pieces of cardboard on the set and saying, "Actually I want it to break a bit more." And we'd go away going, oh god, how are we going to do that. So we created these pipe cleaners, um, that were going to be the spine of the structure, then it was a matter of, with the map that we created of each individual spine, ar, cutting and rewelding the steel or simply bending it sometimes so that we had this skeletal structure made out of steel then from that - in order to make the cardboard do what we wanted it to do, and yet still be attached to the spine - we put what we call slappers through it which are basically the verterbra of the spine. We welded tags to the spine itself, tags of steels with holes notched into them so then we could put pieces of timber … so if you can imagine it basically ended up then twisting like verterbra so then from there all we had to do was attach the cardboard to the verterbra and then that would create each individual piece … so that is probably where it got the most interesting, um, we had a lot of problems with the spines, putting them together because of the space that we were dealing with, um …

So that when you say the space, do you mean the stage or the space where you were actually working?

The actual workshop where we were working in. As you can imagine, building a twenty four metre set that was 9 and a half metres high there's not many places you can do that and unfortunately this happen to happen two shows after we moved out of Wilson St where this set probably would have been quite easy to put together … because each spine was individual … there was no two the same, ar, we could have then just laid them out and put our cross pieces in and done it all in situation, but because of the nature of the workshop we were in we went from a thousand square metres of workshop to about 150 square metres of workshop and yet we were building probably the biggest set we'd build since we sent Threepenny Opera to Colombia. So we had to work with each spine individually and we never actually got the chance to put the whole thing together until we got to the theatre so the whole set … was going to rely entirely on measurement and as much calculation as we possibly could, um, to within 5mm over 9 and a half metres.

And when you came to theatre and it bumped in and it went up, did you find that your measurements had been accurate and did it …

Um … yeah, look it worked better than I thought but not as well as I'd hoped, I guess that's the best way to put it. I knew that we were going to have to redrill holes, 'cos like I said … we were drilling holes – I should explain that the skeletal pieces, ar, in order to hold them rigid and to stop them from swaying side to side once they were rigged, we had these, ar, girding, sort of belts, spandels, that ran along the back and bolted in so each piece bolted in to its own individual bolt holes but because they weren't always parallel, perfectly, um, vertical, the bolt

holes were all skewed so there was a lot of measuring going on. The bolts themselves are about 10mm in diameter and so you drill a 11-12mm hole. Basically that meant over the entire span we had to drill 4 to 6 holes that had to be within 2 mm of being accurate over 9 metres so I never really expected us to just walk in slot it together and there you go, particularly it being the first time it had ever been put together, um, and as I said the steel is actually quite flexible so as we coated it with the cardboard and all the scenic art and things I could tell that it was drifting and it was bending and going of its own free will which is what Brian wanted but wasn't necessarily what I wanted to put it together, um, so we had to drill out a lot holes when we came to the theatre.

And when you came to the theatre, I mean how long did it actually take from, you know, when the trucks arrived with the pieces till it was ready to have actors on stage with it?

I think it took us 6 hours from the time the truck arrived till the time we got the first of the [sections assembled], there were 6 sections to the set in the end when all the individual pieces were put together into 6 thirds if you like, one half of the stage had three pieces and the other half had three pieces … it took us 6 hours from the time we arrived till the time we finished assembling the first section, um, and at that point, we all went and had lunch I think, or was it dinner, I can't exactly remember, but I remember going away kicking stones and cursing myself for not having worked it out better then when we back in between that and the next break I think it only took us another 4 hours to get the entire set up. So it turned out what I thought had been really poor planning and measurement and that I hadn't worked it out properly … it took time just to get it together and to work out a method of how we were going to redrill some of the holes what we did first, how we assembled it, um, together again, so in the end it actually went up relatively easily … in a sense it was very easy in that we basically on the first night of bump in we had the set in and finished, well, not completely finished, but it was up, it was structural and lighting were able to come in the next morning and start focussing. So I was quite proud of that in the end, that we actually managed to do that, um, but it didn't start off terribly well.

And just going back to the actual construction how many people worked on the construction and how long did that phase take?

All up 4 of us worked on the actual construction itself, um, there was Peter Crome did the welding and, um, Jeremy Clegg and myself did the carpentry work on it and the laminating and then Bernadette Butson came in and she and Jeremy and I did all the scenic art on it. From go to whoa, um, it took 2 weeks of drafting, redrafting, planning, test pieces, samples, ar, working with Brian [Thomson, set designer] and trying to find the finish that we wanted to get because he wanted it to look like cardboard but there had to be some suggestion of melted steel as well, and a feeling of general decay and collapse, so it took us round about 2 weeks to do that … then … from there I think all up it took us 6 weeks in total to build it … two of which would have been pretty much just solid welding and then another two of laminating and throwing the cardboard, probably three weeks of that, and then a week of whacking scenic art on it

And are your responsible for the scenic art, for the painting of the set?

Yes, yes, I oversee it, um, in the end, it's probably the most difficult of all the processes because, ar, it's a matter of marrying a scenic artist with a designer.

Can you tell us a little bit about how the colour of the set came about?

For Stuff Happens it was organic, it was definitely organic, um, basically Brian [Thomson, set designer] never really did a scenic treatment on the model … he did a colour treatment on it, but it was more a case of the two of us sitting down and working out the feel ... it was, it was quite daunting … Brian and I sat down with quite a number of books that were just all about Ground Zero, what it looked like, the people it had affected and to go through those pictures and the words and things without CNN themes and reporters and without, without all of the

bluster, the political bluster … it is very hard not to be devastated and we thought it was very important to capture … there were certain things we noticed, that there were the most obscure things … that everything was covered in dust and there was this horrible grey, volcanic like ash, to the point where some stores, some places where you saw it, it almost looked like Pompeii, there was an enormous amount of rubble and carnage and structures that looked like they should have stood up for years suddenly looked like crumpled pieces of cardboard, I mean, steel girders melted …

So when we came the scenic art, we had all these gut wrenching images, it really did come down to just absorbing all of that and then going away with a sample and just trying to replicate what we'd seen in the images and what we'd felt and we would have gone through probably about half a dozen different samples, different ways of working … and in the end it was funny because in the end, the simplest was the piece that worked, um, the easiest way we possibly could have done it turned out to be the best, um, and it wasn't far from what Brian had done with the model, completely accidently but it was interesting how we came that full circle … how we started off putting on layers of texture and sanding it back and then layering it again and using four different greys to do it with and eventually it ended up as one layer of texture, um, a dark grey and then throwing water at it and bringing it back and that was the look that ended up being that ash grey … to the point where it got quite depressing in the last couple of weeks of scenic because we were in this tiny workshop, we had all these rafters and pieces suspended from the ceiling, gathering on the tables and we were literally moving one piece of scenery out of the way so that we could paint another and then moving that to get to the next, constantly shuffling it and we were surrounded by this horrible, horrible, horrible grey colour that just conjured up everything we had just been looking at so it was quite a relief to walk away from the set at the end of it all …

And I might get you to talk briefly about the set pieces … there weren't really many, but, there were the table and the chairs and the lectern … did you build those?

Um, no, no … there was a definite need within all of that to throw [the set] into relief … to have this overbearing, ugly, monstrous structure and within that the entire play takes place … basically in clean offices, clinical … (spaces) … so the brushed aluminium look was decided on and that was a very neutral look … and we wanted it to be very clean and very sharp so we used we used a table that was from *My Zinc Bed* (Company B production, 2002) and we altered it and adjusted it and then sent it off and got it laminated … The chairs were bought specifically for the show and the lectern was made specifically for the show … because the lectern stays in the one spot for the whole time we wanted to manufacture it out of perspex .. so it was visible through it, but in general I think what Neil [Armfield, director] and Brian [Thomson, set designer] went for with that was just the clean, crisp nature … in a way with the aluminium I guess the cold nature with which diplomacy deals with situations like this and how they capitalise on it and so that became a sharp contrast to the Jaspar Johns star spangled floor and the 9/11 [image] looming over them.

And maybe, just to finish, when and where does your job finish, I mean, once the show is in preview, once it opens, is there a point where, for the set construction manager, that's it ?

Um, yeah, definitely … usually for me as soon as a set has been bumped in and usually during the lighting plot or the focus … when I am sitting in the auditorium and I am watching, ar, whoever it is, plotting the lights, um, once I've sat back and looked at the set and I am happy with it or I know there's nothing more I can do with it … that that is the set the everybody will see on opening night … basically you jettison the whole project out and your brain either clears and says 'Thank God let's have a holiday." … or it moves on to the next project …