INTERVIEW BILL JONES, 20 SEPTEMBER 2011

Hyland: *It's Thursday 20 September 2011, 11.30, and my name is Clark Hyland of Hyland Consultants Limited. I'm investigating the collapse of the CTV building on behalf of Department of Building and Housing and with me are –*

Buckeneng: *I'm Fiona Buckeneng and I'm a mediator with the Department of Building and Housing.*

Jones: And William James Jones, ex-foreman on the CTV building.

Hyland: *Okay, thanks Bill. So what I'll do first, I'll just try to take you back to the days of construction of the CTV building because we're interested to know the sequence and how the building was built from the foundations up. I've got some photographs here that were taken during construction that might help just to browse through.*

Jones: I almost regret that I didn't ask if you could bring down a set of drawings so that I could have – I mean what is it? Over 25 years.

Hyland: *It's a long time ago. I have got some drawings here as well, so we can refer to that. That's the picture of the first floor columns.*

Jones: Yes, the first floor columns and the start of the – no, no shear wall started at that time.

Hyland: *I think it might have been maybe May 1986. Here's the picture taken from Madras Street, that's up to Level 4. And there's a tower crane at the back on the south side.*

Jones: Yes, the tower crane was braced onto a floor which made a lot of movement in the building. My office was there and I'd handrails down onto that and I was forever telling the crane to go easy because when we were lifting big beams or big weights, the building moved.

Hyland: *That's the photograph from Madras Street of the building up to Level 6. That's 1, 2, 3, 4, 5, 6. Must be the roof.*

Jones: That's the roof there.

Hyland: *The roof's on. Here's some airconditioning ducting that's being put in.*

Jones: Yeah. These were all hardipanel over timber framing. They weren't concrete.

Hyland: *Those are the spandrel panels at the roof level.*

Jones: Yeah, they were ... they were panels that we made up and lifted them up and brought them down and then connected them onto the street at the bottom

there, and the structural steel – was it a rafter or something? It will be on the drawings there anyway. Yeah, my office had been moved at that stage.

Hyland: *You were stuck in here now, were you?*

Jones: Yeah. I used to take my friends past this building quite a lot and used to point it out to them because it looked so nice up there, standing on its own. But I changed after – oh, about 10 years later – I don't know when CTV took it over but they painted all the spandrels and filled in all the bottom, and it didn't look like the same building.

Hyland: *Yeah, this building here I think – this building was demolished. On the Cashel Street end was demolished and they made that into a carpark I think after –*

Jones: Yeah well the crane – it was still there. The crane's still coming down there on the building there.

Hyland: *Right, so it's on the south –*

Jones: It's on that south corner there, yeah, and we moved the bracing too from the crane over – I think the first lot went on there and the next lot went on – I'm not sure if it was there.

Hyland: *So it would be Level 2 and Level 4 maybe.*

Jones: Yeah, I wouldn't be 100% sure on that.

Hyland: *Yeah. And they had the metal deck, profile metal flooring sitting on the –*

Jones: Yeah, on the timber beams.

Hyland: *Concrete. Concrete. So these are the drawings. I'll get those out. That's the ground floor layout, the architectural –*

Jones: Have you got a foundation plan drawing?

Hyland: *Yes I have.*

Jones: I've seen exactly what I was looking for really, was the fact that there was – I knew there were only pads in one area there.

Hyland: *So line 2.*

Jones: Yeah, and there was no other tie pads anywhere there, but anyway that's just something I was a wee bit curious about, the fact that the rafter as you would call it on the bottom there was not all fully tied together.

Hyland: *Right, so it had the perimeter – the perimeter was sort of tied in.*

Jones: Yeah.

Hyland: *And line 3 foundations were tied in, and then they had tie backs from the core but gridline 2 pads were just isolated pads.*

Jones: Yeah, that was more just – I think we helped to tie all that core itself to give it some strength.

Hyland: *The core, yes.*

Jones: The foundations weren't very deep, I know that. When I heard on the TV there one day that someone ... they were told it had rubber bearings.

Hyland: *Yeah, I don't know where that came from, but we've heard that from some of the tenants.*

Jones: I said "no way, no way". It was a simple foundation, no problems with the foundation.

Hyland: *Can you remember anything about the foundation conditions when you were digging it up?*

Jones: The underground? No, not really. We just – I don't know whether we ripped out the whole floor area or not. I know any rough stuff was ripped out and then metalled to the – I'm pretty near certain the pads were all poured. Basically the pad might have been scratched out in the ground there but anything that came up was all remetalled.

Hyland: *Yeah, it was backfilled with hard fill.*

Jones: With tailings or whatever the hard fill specification was for it.

Hyland: *Would you say when you scraped out for them that there was good –*

Jones: Well, at that time of the year, yeah. There wasn't any flooding on it or anything like that, no liquefaction in it that I could see there.

Hyland: *Yes. Was there a building on the site before –*

Jones: Don't know much about it. I came straight from another one of Alan Reay, was it? Alan Reay's one and that looks like it's coming down too. Aged People's Welfare.

Hyland: *Aged People's Welfare.*

Jones: Over by the bridge of remembrance. That one's coming down. It's got a sticker on the door. We went for a waddle one day. I wanted to see what my town looked like but it didn't look like my town any more. Mind you, I've got a boy up there, go up there quite a bit.

Hyland: *There was a gas main – there was an old gas pipe coming in from Madras Street. Were you aware of that?*

Jones: Um, yeah. I could smell it in the soil, I think, for quite a while we could smell gas. You're asking 25 years ago, and sometimes when I think back now, I think of other buildings. I don't get a –

Hyland: *Yeah, they mix, they merge into –*

Jones: They mix in with one another. It's like if you asked me all the names of all those that worked on that building, I couldn't even tell you blimmin' hardly one of them, because they all worked on different buildings and also we used Advance Personnel and hired staff, outside staff as well.

Hyland: *Yes, just on a daily –*

Jones: Well, a daily or weekly basis. Some of them stayed with us for three months. If they were any good, we tried to buy them off – if they were no good, we sent them packing. No, I think can recall smelling gas on the site. We didn't really – we didn't really have any problems with the foundations. The building worked out the wrong size though for the site. In the finish these two columns here were over the boundary.

Hyland: *Oh, so these were the –*

Jones: ... that out from the back to the front.

Hyland: *The little entry way columns.*

Jones: Yeah.

Hyland: *... line 4.*

Jones: The building was okay, but the columns, the entry way was out over the front.

Hyland: *Ah okay, so on this photo here, those would be –*

Jones: I don't think they were poured at that stage.

Hyland: *Yeah, must have been poured last.*

Jones: Yeah, we didn't do anything with that until late in the piece. We've got old core formwork coming up here, haven't we?

Hyland: *Yeah, there's some core formwork there.*

Jones: I mean the guy – steel I'm talking about, all the core steel's coming up there. That was the AA over there, in the back there. Motor mechanics. That was American Health Studios. This building in here was owned by the joker that had Stonyhurst Hotels, so I knew them all. They're all coming back to me slightly now. Probably the further along we get, the more I might remember.

Hyland: *Yeah, that's good. Are you able to sort of tell us sort of what roughly if you can remember, what sort of sequence the building was built in terms of which foundations were done first and which columns were poured?*

Jones: Not really, not 100% anyway. We would have started probably – I set things out in my own way is that I've got a width of the building from there to there, I half it to there, I measure to that corner. Whatever the measurement to that corner is the measurement to that one and you've got a complete square. That squares the building. So I probably would have started on the back of the building.

Hyland: *We'll call that the west face.*

Jones: The west face, so I would have started on the west face of the building and worked my way – probably leaving this side out.

Hyland: *That's the south side.*

Jones: I had a parking meter there that they wouldn't come and remove to allow us access.

Hyland: *Oh, a parking meter on Madras Street.*

Jones: Yeah, and they had one there so we pulled it out and stuck it in the shed. Six months later they came looking for it and it was still there with money in it too. The boys wanted to get into it. They'd be in for it.

Hyland: *Okay, so would you say when you poured columns would you have poured them in threes or fours?*

Jones: We had so many moulds made up. How many columns total are there? There's one, two, three, four, five, six, seven, eight, nine, 10, 11, 12, 13. Thirteen columns.

Hyland: *14, oh there was one here too, there was like a square one here.*

Jones: Yeah, no, I won't count that one because we had steel moulds made up for them and these ones in this area had a steel mould made up that was suitable for the height of all the other floors. But this floor was smaller. So we had a 600 extension put on top of it. Then we threw those away afterwards, well basically after –

Hyland: *So you had like a steel former with an extender.*

Jones: Yeah, I think we had either three or four columns and we used to do a pour of a column – the steel would be in, we'd put the shutters around and we'd pour that day. The next day we would strip the columns and they asked I think for hessian wrapped work for seven days but that proved a problem so they allowed us to spray them with – I can't think of the name of the product, but it was a product that sealed them from drying out.

Hyland: *Right, so just sort of kept the moisture in.*

Jones: Keep the moisture in the column so we sprayed with that, so all the columns were sprayed which enabled us to get on and as we went up with the other floors, we didn't have water laying on all our floors as well.

Hyland: *For the slab did you use the same sort of spray?*

Jones: Same sort of spray on the slab. Sometimes we wet the first day, or the next day, and then got onto it and sprayed it before it dried out completely.

Hyland: *That's a proprietary ... compound.*

Jones: We were lifting – that was always a worry to me, the fact that we were lifting all the gear up on the next floor the day after the slab was poured which meant the first thing we'd be lifting up would be the steel for the columns.

Hyland: *Reinforcing steel, yeah.*

Jones: Columns and then we'd get a set of columns lifted and bolted around, and possibly even get a pour on that day. The day after. The columns would have been all oiled and ready. You put the – oh, wait a minute, took me a wee way longer than that. It won't be the next day because I always had – after the slab was poured, I always had a half-day setting out the gridlines. So it would have been the following day.

Hyland: *So the slab below – I think we've got drawings here – was propped at a third – I'll see if I can find it here.*

Jones: We're talking about the first floor slab now, down on the ground floor.

Hyland: *Yeah, so talking about – yeah, so here's your suspended slabs with the metal deck with a hi bond going over – it says it was precambered up over supports at quarter points actually, so when you're saying pouring, they're bringing the reinforcing up on top the next day, you still had the – you still would have had the props underneath.*

Jones: Oh yeah. They stayed about three floors.

Hyland: *Three floors down.*

Jones: As we went up. The ground floor would be there propping the first floor. Here you are on the ground floor. First floor. Second floor. And we might have whipped every second prop out on the ground floor once the other one was poured. But we always had a minimum of two fully propped floors and when the third floor was – we had three underway. We had miles of props. The company had miles of props, but it was loading the stuff like up each time onto the green slab that worried me a wee bit.

Hyland: *Oh okay, yeah, just damaging it.*

Jones: Yeah, but we had a programme to work to which was really in some respects my programme because I had to do all the ordering and all the

events starting – earlier starting time and finishing time and when the next one could start in relationship to the last one being finished if you can understand what I mean.

Hyland: *Yeah, so just trying to sequence the stages. So going back ... four columns, four circular columns at a time. Then you've got these precast beams, would have been set onto the columns.*

Jones: No, no. They were all propped. The beams were all propped because in some cases the column was 300 – oh, 400 – and the steel that was on there, just steel around the outer edge, you can't – the beams were sitting on so little of the column, probably some of them might have been 30 mm or 40 mm and some of them might have been 20 mm, a wee bit of give and take there.

Hyland: *Yeah, we noticed they sort of had – they'd like profiled the ends of these.*

Jones: They made a – that started before I got there. Someone had made these circles to hold the rods at the set distance and the ones at the opposite end were made further over so that they would miss one another when they went together.

Hyland: *Oh okay, the lapping bars – the hooks coming out of the ends of the beams –*

Jones: Well you had that –

Hyland: *So they wouldn't clash with the other ones.*

Jones: Well you had that, and that, and where's the ones with the hook on? The top one.

Hyland: *What do you mean?*

Jones: Oh no, that's – I'm trying to think – I always thought there was another top bar on that. It must be on top afterwards, is it?

Hyland: *Yeah, probably on the in situ reinforcing.*

Jones: Yeah.

Hyland: *So on these cross-sections they've got – a typical grid beam had four H28s over the – running across the top of the internal columns. Running through. Are you saying those – so if we're looking at S18, you've got the precast beams –*

Jones: Yeah, and these are cased beams. Filled in with concrete on the inside of them.

Hyland: *We've got a picture – here's one here, section 2 on S15. So that's one of the hollow shell –*

Jones: Rose hollow, they were pre-propped – the propping was put in for them and they were just laid – sat there.

Hyland: *Yeah. We noticed they didn't have any scabbling on the internal faces of these.*

Jones: There was no scabbling. I never – they arrived on site – they were made – because they were decorative beams, they were made by a precast supplier and they just arrived and were put up. I never gave scabbling a thought to tie it together.

Hyland: *So they just came as ready to go.*

Jones: Yeah, ready to go.

Hyland: *Do you know who the precaster was?*

Jones: No. No, look, I couldn't guarantee who it was now. Precision. Look, I can't really say. I couldn't say with any accuracy on it.

Hyland: *What about with your in situ concrete say for your columns, are you able to remember who might have been the supplier of the concrete?*

Jones: No, did you ask me that ...

Hyland: *Yeah, yeah.*

Jones: Not Firth because I don't – we used to use three concrete suppliers. We used to use Certified, we used to use Firth and we used Readymix on that concrete.

Hyland: *Oh okay, three suppliers.*

Jones: Three different suppliers who would be able to supply me at a particular time for – because I need to book it some time. I'd ring up and if they couldn't do it, I went to the opposition, you see, but normally the company – the company, like my bosses, they were the ones – the quantity surveyors and that would give me a concrete supplier for the whole job, but in saying that, if they couldn't supply concrete for three days when I wanted it, then I would go elsewhere and I had the company's approval to do that.

Hyland: *Yeah, okay, just because of time.*

Jones: Time. Time was more important than the wee bit of extra rate they got for a cheaper supply so we had the three basic suppliers.

Hyland: *So you had three suppliers of concrete for the slab, the –*

Jones: No, we'd only have one supplier for each pour. There'd only be one supplier for the ground floor, one supplier for each floor. They'd do all the concrete. Sometimes – I noticed in recent years, not so much then but in recent years you'd have a supplier like I did the Canon Woolford Wing was

my last major job at St George's Hospital. I was project manager on that and there was 800 m^3 of concrete in the basement slab and each slab was over 100 m concrete. One concrete outfit would give us the concrete but they'd use other trucks, but I think the trucks went out there and got the concrete still from the original supplier.

Hyland: *Oh, so they could be labelled with one particular company but they might be getting the supply that day from another provider.*

Jones: Yeah, from the main – the one I've got the booking with, they didn't have enough trucks to handle it, so they jacked other trucks up from another company, but I think the concrete still came from – the likes of if Firth was supplying the concrete, it would be all their concrete but it could be anyone's truck.

Hyland: *It could be anyone's truck might turn up.*

Jones: Yeah.

Hyland: *Yeah, and they've got the order, or it's been passed on to them to do the –*

Jones: To come along and help out, yeah. That only happened when there were big pours, like.

Hyland: *Yeah, okay, for big pours.*

Jones: For big pours, yeah.

Hyland: *So that might not be necessarily relevant for this job.*

Jones: No, no. Well, in saying that, I don't know.

Hyland: *What you're talking about is that was a practice at the time when there were big jobs.*

Jones: Yeah, quite often you might ring up and say – I forget how many metres there'd be in that slab, so say it was 20 metres, we'd get three five-metre loads and a balance, and sometimes the balance came from somewhere else, but it was always my original supplier's concrete because it had their docket. It could be a Readymix truck but it had an Isaac docket from memory.

Hyland: *Yeah, so you'd still be paying – effectively the payment goes to Readymix and they sort it out.*

Jones: Yeah, they sort their own –

Hyland: *Was there much involvement with the engineers around the concrete pours?*

Jones: Engineers were rung for – basically from my way of thinking, I used to ring for every pour, except in columns because the steel was there and they could see it sticking out and the columns ... I quite often rung them and let them

know I was pouring but quite often they didn't show up. They'd just say "if you don't see us, go ahead".

Hyland: *But they were notified generally. What about the precambering? Did that happen?*

Jones: Yeah, this job started around about the time of doing the free screeding. It was one of our company's first free screeds. The boss arrived down there that was in charge, brought some people down from Wellington to do a demonstration.

Hyland: *From Williams Construction.*

Jones: Yeah, to do a demonstrate and show us how to free screed. And there was a big – the boss asked me, he said "do you want to have a go, Bill?" and I said "no thanks".

Hyland: *Do you want to just explain what free screeding is?*

Jones: Well free screeding is you turn around and you pour the concrete – well first of all you establish levels, you set the laser up and your level would be set up, or the theodolyte, whatever you like, would be set up here or anywhere.

Hyland: *On the corner.*

Jones: And you'll spot your floor level around the edge, and you'd say "that's that much higher" so you dumping in a wee pad there, or a wee pad there and a wee pad there, or I beg your pardon, you're dumping all those ones down there, but you wouldn't put all the pads in because they'd be off by the time you got the concrete done.

Hyland: *So you're putting in a little piece of concrete –*

Jones: Little pieces in there, screed it –

Hyland: *Screed it to the level and then that becomes a marker.*

Jones: That becomes a marker, and then you'd go to the next row and you do that, and then when they screed, they screed through to those pads. Prior to that we used –

Hyland: *So effectively you're screeding to a fixed surface level, a finished level, so you're screeding to a level.*

Jones: It's level to a point.

Hyland: *To a point, yeah, given the –*

Jones: Like that would come up to there, because that's really your propping, as you prop because you prop to a point and the roofing – the product stays straight between points, doesn't it?

Hyland: *Yeah.*

Jones: Probably if anything you might get a wee bit of a hollow in between the middle and the ...

Hyland: *Yeah, that's right.*

Jones: But you'd get that extra ... it would be in the bottom anyway, wouldn't it?

Hyland: *Yeah, yeah, it's quite tricky to –*

Jones: Yeah, oh don't tell me about that. I got into real problems doing that ... I set the precamber on the floor level but I set it at the outside edge, but it was level across the width of the foundation and it should have been set for there, so we put all the concrete in and when we came to do the floor slab, it was short thickness. It was in lines – it was within the tolerance not put out in the specifications but it was in the tolerance that we were building to, the building code if you like. But we got around it.

Hyland: *Those things happens. Okay. Okay, so we've got the slabs, the precast plans, we've got those in, we've got these edged beams. So effectively you're beginning, once you got all – so you get your four columns in. Okay. Oh, down the west wall you had some rectangular columns, do you remember those? Four rectangular –*

Jones: Yeah, but they – I don't remember much about those really. I was trying there one day, thinking about it, whether we had round columns on there and you could see right through when that building was demolished, but that might have been – on the ground floor it wouldn't have been filled in with blockwork, would it?

Hyland: *Yeah, it was. Eventually there was –*

Jones: Eventually when they used – it was after a carpark, was it?

Hyland: *No, you'd have these three levels of blockwork on the west wall from ground up to Level 4.*

Jones: Oh that there, these are these columns you're talking about.

Hyland: *Yeah, so these are the columns here.*

Jones: Yeah, they were just boxed up.

Hyland: *Just boxed up.*

Jones: Yeah.

Hyland: *Yeah, okay. Okay, so you got the floor up, you got the – then you go up and do the next level of columns. Okay, so what about the shear walls ... what was the sequence of doing those, relative to –*

Jones: Well, the share wall would be up and poured in conjunction with the columns, at the same time as the columns, so that you connected through to there. This lot out here –

Hyland: *So that's the north walls we'll call those.*

Jones: Yeah, we would be working on that. Well you can see by the earlier photographs that we'd be working on that pretty early in the piece to get it up for the slab to butt into, the formwork to butt into. Because you needed that along here. Yeah, that was poured in there. That was only a stairwell landing there.

Hyland: *That's right, stairwell, steel stair treads.*

Jones: And that's the doorway through there. Have you got the top lift there? This says Levels 1–6.

Hyland: *Oh okay, so where are we? Here's the detail of the north core, there's Level 7 and Level 8, so Level 7 is roof, roof level, and Level 8's top of the lift core.*

Jones: You know, I was always under the idea that there was no doorway in there on the top.

Hyland: *Ah yeah, that's just sort of a – that's just like a wall. There's a window sort of partition –*

Jones: Yeah, but they put a doorway in there, didn't they?

Hyland: *No, not at the upper levels, no.*

Jones: Yeah, top level.

Hyland: *No, don't think so. We're looking at up here and here. That's on that photo of the six floors.*

Jones: Yeah, that's outside the line of the building. They put a thing in there, an extra doorway in here, on the top with a cross, a cross on top of it. I've got a sheet like that telling me to fit a doorway in there and I didn't like that very much. The core was pretty small in itself at the time. Pretty damn certain that –

Hyland: *So that's on Grid E.*

Jones: Yeah. Well I've looked at every photograph I've seen in the paper and I reckon that's got a doorway up there.

Hyland: *Was there a stairway – you thought there was going to be a stairway there or –*

Jones: No, it opened into the room.

Hyland: *Oh, into the room.*

Jones: Into the landing.

Hyland: *There's your two lifts. So you come out of there and there was – there may have been office partitions in here, I don't know.*

Jones: But if you came out of here, they'd be outside the building, wouldn't they?

Hyland: *Yeah, that's the edge of the building.*

Jones: I don't know why I thought that. See, I'm not right. Because I had a ring – did I tell you that I had a call about this building?

Hyland: *No.*

Jones: About 13 years after it was built. I had a call from someone that was doing an investigation in the building for someone that was interested in buying it, and he wanted to know about the alterations that had been done on the top floor to the core.

Hyland: *Ah okay, yeah.*

Jones: And I said "well I don't really know" but I said I was given an A4 sheet and it had their typical brace – they've probably got one shown here somewhere ... typical brace. Oh, don't worry about it. Looks like I was wrong anyway.

Hyland: *No, that's alright. I mean there was some steel angle drag bars put in at that location on the Grid E wall, and on this Grid D wall.*

Jones: To the core.

Hyland: *Yes, tying into this.*

Jones: Because that was the whole bracing wall, wasn't it?

Hyland: *Yeah, this was the bracing wall, and so I think it was in 1991 they put in some angles and bolted them into the slab and into the wall here. But you weren't involved in that.*

Jones: No, no. No, and I noticed looking – because I've been quite interested in this building since it got hurt. I only wished I'd gone and had a look prior to it getting hurt, but I notice that the photographs of this shows that wall edge there, and all the slab from here has gone. So the fixing to the shear wall along here went right through and the way the slab was poured, we started the shear wall again on top of the slab. So there were two joins here. There was a join on your shear wall which is the underneath side of the slab.

Hyland: *So that's to the underside of the –*

Jones: And when you poured your slab, you poured your slab right through, through the steel and everything.

Hyland: *Through the steel, right around the edge of the wall?*

Jones: No, we might have had that a bit higher for hooking the shuttering on. We did. Those walls are slightly higher so that when we lifted the formwork up – but these ones, the shutters that went back onto this wall sat on the floor, and we put some concrete spreaders in the thing when it was still green to stop it moving, so the steel actually from memory went right through, so when that pulled out, for that to pull out of there, that would have to go too, wouldn't it?

Hyland: *Yeah, that's – the Level 6 one was still sitting on there.*

Jones: Yeah.

Hyland: *Immediately after the earthquake it was still there. It was attached on here.*

Jones: It was.

Hyland: *Well, it was attached to these bars, these angles. The other ones had fallen away. But what happened is as they were doing the rescue work, they demolished some of the slabs away just to keep it safe.*

Jones: Oh well, that's probably where I've got a misconception of how things happened. But anyway, so you're asking the questions and I'm jumping the gun, aren't I?

Hyland: *No, it's all good. So you've got the formwork for the core walls went up in sequence with the columns, and the shutters would just go up one floor at a time.*

Jones: One floor at a time, taken down below, stripped and cleaned.

Hyland: *Just cantilevering off the core below.*

Jones: They were all shee-bolted through from one – through, as a sandwich, and when we poured the core, we poured it – with the amount of concrete it was in and the thicknesses of the wall, it was calculated that we shouldn't do any more than two feet an hour I think.

Hyland: *Oh okay, in terms of pouring.*

Jones: Yeah, so we poured two feet all the way around, vibrated that, and then we'd come down and put a mark on our vibrator and we'd put the next two feet in and we worked our way, and we made sure we were – even had to slow up sometimes to make sure we weren't over the hour, under the hour. Because we didn't want too much pressure on the formwork.

Hyland: *What about the survey tolerance on the wall? How would you set out your – were there checks on –*

Jones: How do you mean?

Hyland: *Just your plumb, your verticality of your wall, how would you check whether the wall was going straight up?*

Jones: Good luck not management I think. No, it wasn't. We put all the inner side boxing in, all of this boxing would be in. That would be all in, and the formwork was made up with loose columns, pieces that came out from memory.

Hyland: *So you've got in-fill –*

Jones: Yes, we've done everything and then had all that to shape and to size and plumb and everything on the slab, and then when we put the outside wall on, we had spreaders.

Hyland: *Oh, spreaders from the inside to tie back.*

Jones: Two spreader shee-bolts right through –

Hyland: *Spreader shee-bolts just to pull in the outside, so effectively your inside face was your true face, and your outside face was then just pulled in to suit. So you'd get your verticality on your inside face, and your outside face may be –*

Jones: Well, that was why we kept the pours to so much. We had enough vibration to vibrate the concrete. That was the critical thing and to tie to each one, but not to put – if you filled that wall up right to the top, she'd have blown out the bottom.

Hyland: *Yeah, that's right.*

Jones: Just gone.

Hyland: *Yeah, because they're reasonably thick walls, 300 I think, yeah. Okay, so that's good, so you're 300 thick. You go up in stages of 300 mm with your pours. Your inside face is –*

Jones: A bit over 300. Nearly two feet.

Hyland: *Oh 600, that's 600, yeah. 600, and your verticality was set out on the inside face of the walls.*

Jones: Yeah, and the bolts went right through.

Hyland: *The bolts were done there to pull through the outside face. Okay, that's really good.*

Jones: Oh we scaffolded the building too. The system you're talking about I used on St George's where we had the frames and you can plumb those frames off the existing wall below and they held it. But this wasn't the case with this one.

Hyland: *There's your – on that photo there you've got your outside –*

Jones: Slims. You get them in varying thicknesses. You can actually bolt a member onto the bottom of those and have a screw jack that goes in to plumb as well. But in this case we didn't really need it. The bolts went through and as long as we were using those, if you were hard in at the bottom and you were the right measurement at the top, that was all you needed. There's some more down here that haven't been lifted up.

Hyland: *Yeah, just in front of the ute there. You've just got more forms and as you say, the corners you just fit out.*

Jones: Yeah. Of course that ... on whether it's a corner there or not. The corner fitted so that it picked up the last UB ... joint. I designed those on site just so that it fitted in that corner there, and the one on the opposite side was in here. Same with that one. Because there's a lot of weight in 300 mm of concrete.

Hyland: *Oh definitely, yeah.*

Jones: ...

Hyland: *Now, if you go over to the south wall, we've got this wall with doorways in it. I'll see if I can find a drawing for that. It had diagonal reinforcing in it.*

Jones: ... emergency staircase.

Hyland: *That's right, yeah.*

Jones: That's it there, isn't it?

Hyland: *Attached the emergency staircase to it.*

Jones: I had a set of those wee drawings at home and before I moved I sent them out in the rubbish. Before I moved down here. Because that's what I used to walk up around the site with. If I went out on the site I'd take those with me instead of taking the big sheets.

Hyland: *Oh here we go. So this is S10, this is the south wall ... wall that's got these diagonal bars in it.*

Jones: Mmm-hmm, and the weld plates. Set all those weld plates.

Hyland: *Oh okay, was that for the –*

Jones: ... connecting the staircase, yeah, but in this case we just had a set of shuttering made up to the height of the floor. I'd set out where the weld plates were going to go and the sealer would come in and tie the steel and then we just banged an inside shutter with stopping ... and then poured it at the same time as the columns.

Hyland: *So you go up to the underside of the slab on the floor.*

Jones: It would go up to where we had to seep the iron on.

Hyland: *Seep the – so the metal deck.*

Jones: Yeah.

Hyland: *So your profile decking, so you'd go up to that level.*

Jones: And we'd usually bend the ... stuff to fill those on – I think they brought them out later on. They brought out little caps that you could put on the end of them to stop the concrete running out the big gap in the bottom. But I think in these ones there, we had to box those.

Hyland: *There seems to be some sort of – it's almost been set – set into the walls, some sort of – when they get these precast beams coming in, they seem to be almost like a return in the top of the wall.*

Jones: You're talking about below each slab.

Hyland: *Yeah, below each slab where the –*

Jones: Not above the slab because –

Hyland: *No, just where these shelvings came in.*

Jones: Oh, so the shelving being hooked into the wall.

Hyland: *Hooked into the wall, yeah.*

Jones: I don't know. What's that there? 10 on S19. Is that S19? That should show what ... is in there. We may have put a recess in the end of those walls to allow that shelving to sit in there. It shows a wee recess there anyway, doesn't it?

Hyland: *For the seating there.*

Jones: What did I say, 10? 7, 8, 9, 10. Oh, weld plate, is it? Yeah, there it is there, a weld plate. That's the 400 shear wall there and there's a weld plate on the end of it. I don't know how that works.

Hyland: *What are we looking at here? 10.*

Jones: Because that's the wall. Shear wall. That must be the beam.

Hyland: *Where did you see that section ... under? Oh, it's on here, here it is.*

Jones: 11.

Hyland: *10 S 9.*

Jones: 19.

Hyland: *10 S 19. So that's actually looking down on the –*

Jones: That's 19. So it's down – because there's gridline 1.

Hyland: *Yes, that's right, okay, so this is the –*

Jones: This is the back corner of the beam if you're looking at it really, isn't it? So that is the concrete beam.

Hyland: *Yeah, that's the concrete beam. That's your shear wall and there's a couple of bars, bottom bars coming out of the shelving into the –*

Jones: Into the shear wall.

Hyland: *Into the shear wall, yeah, so you might have –*

Jones: No, they would have been in first I would say. We've recessed that back for some reason or rather.

Hyland: *So you could slide the bottom reinforcing ...*

Jones: Well it looks like so that we had a bit of room there to sit that beam on. Although he doesn't show it, does he?

Hyland: *... precast joints. There's the shelving there. So this one here would be – it's got the diagonal taper on the end of it ... find a drawing that had that marking ...*

Jones: See, that actually shows that beam coming up above the floor level, doesn't it?

Hyland: *That's the precast panel. That's the ... they had in between the columns, and there's your shelving at your floor level. There's your decking coming out the side.*

Jones: I'm just wondering whether there was something in there to weld ... for the shelving.

Hyland: *I don't think there was any –*

Jones: It doesn't look like – I can't see where the connection is there though.

Hyland: *Yeah, I think it's just – that's looking down on your –*

Jones: It's looking down on the beam, isn't it?

Hyland: *Yeah, it's really this side here I think actually.*

Jones: Yeah.

Hyland: *It's actually this side, this one, and then you've got the reinforcing coming out of the bottom of the shelving into the wall and you've got the vertical bars coming up on the outside face of the wall, and this just must be the shear – you know, the hoops.*

Jones: Yeah, just the rods to tie it into the concrete.

Hyland: *And then there was some top steel here. He's got here on S15 the top reinforcing bars, the 2H24Ts, T28 2H24s top lapping into the top of the wall in the – over the top of that shelving.*

Jones: No, I'm with it now. I was getting a bit confused as to whether – between the shell beam and the lower shell beam and the decorative beam that went in afterwards. Now what else did you want to know about that?

Hyland: *So it looks like there's been a bit of a notch made near the top of the wall to allow that reinforcing to sit in there. So it looks like the wall ... poured up to there, and then you bring in the precast beams on the side to get it up to level, up to floor level, underside of the slab. And then the slab had been poured in and then that – it's like this, like I don't know, 800 mm or so, this thing was then filled in.*

Jones: Filled in afterwards.

Hyland: *Yeah, when you poured the infill to the shell beam, those perimeter shell beams. So would those perimeter shell beams have been poured at the same time as the slab?*

Jones: Yes, because you needed that for your slab to butt into. All the beams went right around before the slab was poured. And the core wall was up to the underneath side of the slab. It might have been up higher on the outside walls. It could have been higher on those walls.

Hyland: *Yeah, it looks like, looking in the north core, it looked like there was a construction join on the underside of the slab and also at the top of the slab. Right, so we've got the foundations done. We've got the columns up, working in blocks of four, working from – typically you'd be working, from memory you'd be working from west to east. You then get in the –*

Jones: We had to get the blocklayer in to bring the blocks up, didn't we, before we could pour the back slab, each slab.

Hyland: *Oh okay, okay. I was interested in how you got that. Yeah, so you put the block wall in at level – a line on the west wall.*

Jones: Well, I'm not quite sure of the sequence there because we didn't really need – there is a connection between the top of the wall there ... 7 on – I'm not sure whether they came in and just put those walls up later ro before.

Hyland: *They had some precast – so we're looking at drawing 17 – so they had like a precast beam running between the square columns and then on the underside of that, there was an insert. Some sort of threaded insert. There we go, there's a cross-sectional through the wall. This is section 6 on east 9. So you've got the west wall, you've got a precast beam.*

Jones: Yeah, but you've got dowells put in there, fixings put in there to put the wall in at a later date, and I would say we probably left the face off – the shell off that blockwork to pour that and put it in later. I'm not quite sure. It was

quite a common way of doing it. Or we put the beam – we needed that beam up anyway before we poured the slab.

Hyland: *Yeah, that beam had some starters going into the slab.*

Jones: Yeah, and I'm not sure whether we turned around and put the wall up, blocks up first. I'd like to think we did but I'm not totally 100% sure on that.

Hyland: *So you could have propped that –*

Jones: We could have propped that beam. I don't know, but I'd be inclined to think, going by that and the way he's got the fixing there, that we would have done the blockwork before he put that beam in, that precast beam in.

Hyland: *Might have set the beam on top of them.*

Jones: Yeah. Well you just wind those in. They tie the starters. You know, they use open end pinion blocks.

Hyland: *On the inside, yeah. I think there was another building on this side, on the outside face.*

Jones: It's amazing you know. I couldn't have told you there were blocks on the back of that building. I would have sworn there wasn't. It only went up three – it went right up to the top floor.

Hyland: *No, just up to Level 4, so you've got Levels 5 and 6 above there with no –*

Jones: Yeah, 1, 2, 3 levels.

Hyland: *Three levels of block. So you don't recall much about the blockwork.*

Jones: No I don't to be honest. I don't recall a great deal about it at all, because as I say, I always felt that I could see right through that building. I thought if that building was pulled down, I'd be able to see right through.

Hyland: *No, because there was another building on that outside.*

Jones: Yeah, I know that.

Hyland: *Which they pulled down after September. They pulled the one next door down after September.*

Jones: Yeah, I read a wee bit in the paper about that. They were concerned that some damage might have been done by pulling it down. I think more damage might have been done when they took the tower crane base out.

Hyland: *The tower crane base –*

Jones: Concrete base. Because that was right, not far off the building, and they had to dig a pretty big hole there.

Hyland: *That's your southeast. Yeah, okay, so that's your southeast corner down – would have been on our Grid E line 1. So you might have had it in there.*

Jones: Yeah.

Hyland: *Yeah, okay, so you don't remember too much about the blockwork but what you're saying is the practice at the time may have been to put the blockwork in, then keep the top course –*

Jones: ... put the beams in and prop them and fill it in, do the panels later on. We could have done that.

Hyland: *You could have done it the ... way, that's what you're saying.*

Jones: Yeah, it wouldn't have made any or a lot of difference I don't think. You've got the starters and dowels in there which they've allowed a dowel ... just wind it into an insert.

Hyland: *Greased bar ... put a greased bar in here for some reason.*

Jones: They used those for a while to allow a bit of expansion I suppose, I don't know.

Hyland: *They did say it was Grade B masonry. Where is it? It's only 140 thick.*

Jones: Yes, the old six-inch blockwork. They were only really in-fill panels. They'd be hardly – they wouldn't be structural to support that beam, I would have thought.

Hyland: *Yeah. Would you have any recollection of the engineers inspecting that before it was grouted or –*

Jones: No, I wouldn't. Quite often, you see, well the brickwork and blockwork, those sort of things, were a separate trade and I would just ring up and say "get it done" and he might turn around and say "well I've looked at it and we'll do it later, your beam will carry and put some props there and we'll come in and have it as an inside job in the winter". Later. But in saying that, I can't be sure 100%.

Hyland: *Yeah, what you're saying is that in those days it wouldn't be unusual to – you could put them in, put the beam on top, or you could come back, prop the beam and put the wall in. It's just really dependent on how the programme was going.*

Jones: With that greased rod in there, it lets me believe that they wanted flexibility between the underneath slide and the blockwork, didn't they? It's not as though we could put that up and then do that beam in situ. They didn't necessarily want this fixed to that for some reason. Otherwise why would you have it greased?

Hyland: *On a job like this would you normally have had city inspectors come around or would they just leave it to the engineer?*

Jones: No, just normally left to the engineer. In some respects the building industry around about that time was pretty, pretty – I would say compared to what I was used to – I mean I was used to clerks of works being on the site when I first started in the building game. We were doing St Mary's Church there with Alan Hawker who also worked on the town hill, and he came one day and said "Bill, you've got to stop building on the back of the building and build on the front?" and I said "why is that?", and he says "it's gone down 30 mm, the clerks of works has taken a level on it" so we had to work on the front of the church then and it came levelled up. So it tells you what Christchurch under-structure is like, doesn't it?

Hyland: *Just with the settlement.*

Hyland: *Anyway, so okay, so we've got the foundations, we've got the columns going up. They had a hessian or a spray on them for curing. There may have been two or three different suppliers of concrete. The slabs had a securing membrane sprayed on them. The walls and the columns were brought up to the underside of floor. Precast perimeter beams and the precast beams internally were brought up. And so one whole floor would be poured in one go?*

Jones: Yes, one go.

Hyland: *One ... solid, one full pour.*

Jones: Yes, one pour.

Hyland: *Including in-fill to the perimeter beams.*

Jones: Yes.

Hyland: *The perimeter beams, they were delivered without scabbling on the inside.*

Jones: That was just the way they arrived. If it had been written that they were to be scabbled, I would have scabbled them. I have no recollection of – well, I wouldn't have scabbled them. I would have got onto the supplier.

Hyland: *But they may have been ordered by the quantity surveyors, would they? Who would have ordered the precast?*

Jones: No, I would have. Well yeah, he would have got a contract to supply them and he would have given an approximate date for them and they would have slotted us in, and then I would have given them, on my programme, a list of our dates that we would be pouring the floors so that he could have those beams ready in time for me to get them put in place.

Hyland: *Yes, that's okay. So we've got the floors in.*

Jones: About four tonne I think they were.

Hyland: *Yeah, they're pretty heavy. Yeah, I was looking at the –*

Jones: Those ones over in the back corner there we lifted with a tower crane over there. We had to pick them up and put them down about there somewhere and then bring the crane down the alleyway and pick them up and put them in place. That put a lot of strain on that building. Sorry to say.

Hyland: *Just moving it around during the –*

Buckeneng: *You did say that right back at the beginning actually.*

Hyland: *Now what about – okay, so once you got – so we're looking at this photo here to the floors going up. We can see the props, what you were saying, we've got the propping going through there. Now if you – can you talk about how these in-fill spandrel panels went in.*

Jones: They were a piece of cake.

Buckeneng: *So when you talk about those panels, which –*

Hyland: *Yeah, I'll just get that photo. Yes, these ones here, Bill, these in-fill ones between the columns that's sat over top of the – sat on the floor.*

Jones: Yeah, there's a picture of them here somewhere. Yeah.

Hyland: *So this is on S25 so there looks like there's some sort of –*

Jones: The lugs, they were fix ... they were a tru bolt I think. I think they were, they were a tru bolt. The ... drilled, they lifted them up, propped the front corner.

Hyland: *So that's the inside.*

Jones: The brackets held the beam in place, we put the brackets on the beam and then we put them down into place, got them all aligned and we drilled through and popped in the tru bolts and tightened them up.

Hyland: *What about fit-wise, did they fit in easily?*

Jones: Yes, no problem. Well you had a gap between them of 300 mm or something, 200 mm, if you look at the ... picture of it. Well they fit in between the columns. I don't think they had cut-outs for the columns.

Hyland: *No, so they had like –*

Jones: The column would be there and there.

Hyland: *That's right, so you'd have a 400 mm diameter column and you'd put the thing in and then there was – it seems like there was a timber in-fill.*

Jones: Yeah, timber. I think we put a wee bit of Hardies sheeting, prefinished sheeting that could be painted in between them. I would say that's what we did. In the corners of the building we did something similar. We boxed – he's got 10x10 recess ... face. No, that's not what I'm looking for, am I?

Hyland: *The architectural drawing I think showed that in-fill detail. There we go. So if we're looking at the architect's drawing A7, so you've got the coring at the – there's your precast spandrel panel there.*

Jones: Yeah, it was sitting on – we just lifted them up and sat them in place.

Hyland: *On detail A5 that's 420 between the ends of the –*

Jones: Yeah, so we had 10 mm of clearance each side.

Hyland: *10 mm of clearance each side.*

Jones: And they went in. I don't think we had to chip anything. They went in alright. Up here in the back, I think that was between – there was pole light and we framed up – here it is, it's shown. That's it shown there, isn't it?

Hyland: *Yes, that the ... in-fill detail, timber framed.*

Jones: Yeah, timber-framed with a bit of white acrylic finish.

Hyland: *White aggregate.*

Jones: White aggregate finish. I don't know whether it got that. I think it only got painted.

Hyland: *Yeah, there was like a stone – it was like they'd put a spray that was some sort of stone –*

Jones: Texture.

Hyland: *Textured finish over the whole thing. I mean over these, I mean these look like they just come –*

Jones: Oh, they come with all this chip work on them.

Hyland: *They had it on them, okay.*

Jones: Yeah, all that was done. That was recessed and they put a patch in that later on. It was recessed for the vehicles to get through.

Hyland: *Oh yeah, that's grids 1–2. Yeah, so we had these corners. The corners were filled in with timber and hardiflex and then some sort of –*

Jones: Well it doesn't look like it, only the bottom beam part but that's the beam there. That's the beam. That's not the timber. That's the lower beam, isn't it?

Hyland: *Yes, it's the lower beam.*

Jones: So the top one stopped – the top one stopped back at the line of the column like all the others. Just treated, just framed in at the end.

Hyland: *Yeah, I think that's right. Where are we? That is a corner – actually they have – yeah, these are recessed, they're recessed in a little bit, aren't they?*

Jones: Yeah, that's that bit there in the bottom. Yeah, no, I think that's just the framing around the lower section, around there. But that beam went right around the corner. 7x5 hard around, it's fixed to timber framing.

Hyland: *Yeah, it looks like they might have just taken the hardiflex down the face of the –*

Jones: Took the hardiflex down there, not built that and just left the flat in there.

Hyland: *Well, yeah, it looks like they might have –*

Jones: Might have short-changed them. Oh no, it would be – it could have been an architect's decision to turn around and just blank those off on the ends. I don't know whether a site instruction came through for that or not, but it's certainly different to that, isn't it? I mean if that one shows that –

Hyland: *Yeah, you've got a recess –*

Jones: And that one there shows that. Oh yeah, there's your hardiflex, it's the same.

Hyland: *Yeah, so he's got his 210 to the centre of it, so you've got 10 mm. So what you're saying is they fitted in, you didn't have to scabble them out –*

Jones: No.

Hyland: *So they would have fitted in –*

Jones: They fitted in good.

Hyland: *Yeah, okay. Then they were bolted in –*

Jones: I think from memory I gave him some sizes and then they came down and they checked the sizes anyway.

Hyland: *Oh so they actually might have ... custom measured.*

Jones: Because they weren't required for quite a while. Once we got the base set, or that area say to that area and they wanted to start making them, they could make the lot then because all the columns were on line. Like they'd make all those ones the same, those, those, on the measurement they got down here which should be what was on the drawing.

Hyland: *Alright. What else?*

Jones: What about the roof steel, because that was quite important, wasn't it, in one way because that held all of this up here.

Hyland: *Yeah, there's not too many questions about it though.*

Jones: Pretty straightforward.

Hyland: *Yeah, it seemed to perform alright. There's your roof steel, S27.*

Jones: Yeah, bracing through the middle.

Hyland: *Got rafters running along the grids. Oh, just one question, on the – if we go back to those precast spandrel panels, those insert panels, on these drawings they indicated they didn't actually have them – they weren't initially called up for being located down on gridline 1 between A to D. It looked like they were timber framed in there, but when we look on site it looks like they were installed as concrete ones. Yeah, here. So you've got them marked up here around here and here, but there weren't any –*

Jones: Yeah, I think there might have been another building there at some time. It was going to hide – I don't know but I'm pretty near certain the same beams went right down here.

Hyland: *So the facing panels went in all around. So it might have been initially documented without them there but it was decided to –*

Jones: I wonder if I got paid for them.

Hyland: *You wonder if you got paid for them or not. Okay. Yeah, okay, so just going back to that detail, that spandrel detail, S25, so the fixings there, from memory you think you would have drilled those in.*

Jones: I would say we would have put the brackets on because the insert would have been set in the precast when it arrived, so we would have bolted the bracket onto the precast and then the other hole would have been just there like in the corner and you just drilled down with a diamond drill once you got them all lined through. Positioned.

Hyland: *That would give you a better tolerance on the fitting anyway.*

Jones: And we probably just wedged the corners to get them right. Line them all through.

Hyland: *Were there any specific instructions around the gaps that you had to keep around these columns, or were they just –*

Jones: No, there wasn't really. If it was tight you'd ... out a little bit, but you only had 10 mm of tolerance each side. So if you were exactly right, that's what you'd have, but I mean if you were a wee bit out into the column or the beam – but we tried to just even things up all the way.

Hyland: *You just try and even it out so you had your nominal 10 but –*

Jones: But I would be more inclined to make sure that that one on that column, and that one on that column, where you can look up –

Hyland: *Oh okay, you try and keep the line, a vertical line, a vision line –*

Jones: A vision line because people could look up and they get underneath and they say "ah that one's set ..." more so than on a corner.

Hyland: *That's interesting to know that. So you just set them out as best you can really.*

Jones: Yeah, and on the top – we made those panels up in timber as I say and I had some long threaded rods made that went down inside them and we bolted a bracket on the top of them, or two brackets on the top of them, so we didn't scaffold the building on the outside. We didn't need to. We didn't need to scaffold the front side of the building at all. I painted those all before they went in place and prefinished them all.

Hyland: *Prefinished the panels on the roof.*

Jones: Didn't give me a bonus for that either.

Hyland: *Can you talk about where the construction got to before Union folded or ... took over?*

Jones: I did this one and then we did a dairy shed out towards Leeston way. A rotational one on the water that floated up. The cows, the whole round shed had all the cattle and everything on a floating barge and it was just driven by a wee tractor wheel. It was a beautiful job to do and it worked very, very well actually, but I did that and then I came back into town and then Union Construction formed a new company with Angus and Mike Brooks, he and Tony Scott and Gerald Shirtcliffe – now Gerald Shirtcliffe was an engineer, Tony Scott was a quantity surveyor, and there were two other foremen and myself and we were offered – there were 10 shares. They got three shares each, left one share between us three as a bonus but we never got around to getting it because it never eventuated to anything because we did two foundations. We did a foundation at the end opposite Cashel Street, a big one for a high rise building there, a round tower that they were going to put up, but that turned into nothing. And I started doing one, drove a pile, put shed offices on site behind Radio New Zealand's building and then Angus came down and said "we're going through as a company, unless you've got a couple of jobs ready to start, X million dollars, I'm afraid you're going to have to fold too" so I stayed on with the company until the very last. Sold off all the company's gear and products and all that sort of stuff, and we all went our own separate ways. It was a bit of a shame really because Williams Construction was a good construction company. It was a good construction company. It was a pleasure to work with them. We used to go – the foremen used to be kept well in the picture with management. Every time we had a new contract, the foremen would get invited to the office with all the subcontractors so you met every subcontractor, new ones and old ones, had a few drinks, nice night. And at Christmas time Arthur would come down from the North Island and take us out to Noahs and places like that for lunch. Your cigars at the table would have Williams Construction on them.

Buckeneng: *The sort of stuff that nobody sees these days.*

Jones: Engineers from different contracts. Yeah, and the architects from different contracts. They were good, they were great days. They were a great firm to work for.

Hyland: *How far did the construction get before Union took over?*

Jones: It was fairly well on. I'm not quite sure. Mike Brooks was there but he was working as a manager for Williams and then Tony Scott came in and Gerald Shirtcliffe came in. Could be 12 months. Well, hey, they could have started that one. I'm not quite sure. I'm not quite sure. I think Williams were out of the picture because Williams sold out to Richmond Smart. We all had shares in Williams Construction, I had about $40,000 worth of shares in Williams Construction and they just went straight down. Smart Group took over and they weren't so smart. They were all gifted to us through the company, most of them.

Hyland: *Okay, well that's good. Is there anything else you want to – I think I've covered everything on –*

Jones: Are you happy?

Buckeneng: *It's not my call.*

Jones: I'm very pleased that I said that I – I hope that I have been of some help to you.

Hyland: *You have, you have filled in some gaps, yeah. Very much so. So anything else, if you want to say anything.*

Jones: No, as I say, I'm pleased to see the building again, even if it is only on drawings. It looks more like the building I built, but in saying that, I would have been a wee bit worried. I asked several people about the lightness of this building and I was told that it was for light office work and I wonder at times how light TV3, how all their film and their cameras and gear ... productions and things up there, how much was on that building. One will never know.

Hyland: *When you say 'light', you mean it just felt like a light weight in terms of the sizes of columns and the things that were in it, and the slab.*

Jones: Yeah ... six-storey building up ... with 400 round columns like that. I've put buildings up where the steel – there's been that much steel in it that you can't get a recessed light switch in the ... of the columns because of the starters coming out and the bar next to it ... every bit of steel when it's only got three storeys. And the stirrups were quite light. They had to be light because they arrived on the job about that big, and they would be enough to do probably that column. Stretched them out.

Hyland: *Oh, the spirals.*

Jones: Yes, just pulled them out.

Hyland: *Yeah, just R6, yeah. They're quite light. That's what was specified I guess ... just there to build it.*

Jones: Well, we only built it with what was specified, with what's there. But anyway you can shut it down as far as I'm concerned. I've said too much already.

Hyland: *Okay, so we'll just finish the interview now at quarter past one.*

Buckeneng: *Yes, and we're done.*