

**REPORT OF PROCEEDINGS BEFORE**

**STANDING COMMITTEE ON NATURAL RESOURCE  
MANAGEMENT (CLIMATE CHANGE)**

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**At Sydney on Wednesday 18 June 2008**

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**The Committee met at 11.30 a.m.**

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**PRESENT**

Ms K. Paluzzano (Chair)

Mr F. Martin

Mr R. Oakeshott

Transcript provided by CAT Reporting Services Pty Limited

**DANIEL WILLIAMS**, Principal Environmental Consultant, GHD, 62 Clarence Street, Port Macquarie 2444; and

**MICHELLE LARKIN**, Senior Environmental Scientist, GHD, 10 Bond Street, Sydney 2000, affirmed and examined:

**CHAIR:** I have been advised that you have been issued with the Committee's terms of reference and also a copy of the Legislative Assembly's Standing Orders 291, 292 and 293 that relate to the examination of witnesses. Is that correct?

**Mr WILLIAMS:** I think I have got them here in front of me, yes.

**Ms LARKIN:** Yes.

**CHAIR:** Could you please state in what capacity you are appearing for your organisation?

**Mr WILLIAMS:** I am I suppose the lead presenter and so I have been asked by our corporate sustainability to present three topics that you will hear about soon.

**Ms LARKIN:** I am here as the principal senior environmental scientist.

**CHAIR:** Would you like to make an opening statement to the Committee?

**Mr WILLIAMS:** Yes, if that is okay, I just wanted to do a brief introduction and I think we might break the three topics to discuss into three sections and do questions after each one and chop ourselves off every time we continue a little bit too long.

We were invited to be involved here today by Rob in particular and I have been giving some impartial advice in the background as this process has developed. As an organisation we have, I suppose, embraced sustainability and it has led to our company being involved in some fairly innovative projects, not necessarily just in Australia but also internationally. I think there are some opportunities to bring some of our project experience to the table and certainly working within the framework of a market of carbon and sustainability. I suppose there are some real policy conflicts occurring that we are seeing in the middle, being a consultant, and there was an opportunity to provide suggestions or other options if our policy can be improved to maybe catch those potential conflicts. That was the main reason for being invited here.

Just a brief summary of GHD. We are not a listed company. We are owned by approx 12 percent of our staff. We have grown from approx 2500 employees to 6000 since the year 2000 and most of that has been on the back of environmental aspects. That component of our business obviously led us to fall into sustainability, particularly in large infrastructure and urban development and those sorts of projects, and so we had a look at ourselves and our company chose a pretty strong path last year to embrace sustainability through all our business. We are seeking to be operating carbon neutral as a company by July 2010 and we have a range of mechanisms and tools to advise our clients basically on pretty much all projects where there are opportunities for them within their parameters to improve their sustainability. I suppose the company is trying to say we are going to change our footprint so we can take the high moral ground and walk the walk as well as talk the talk, and to do that we will reduce our footprint, but I suppose the bigger potential for a company like GHD is to get all of its clients to reduce their footprint and that is where we have been able to play with policy versus outcomes and difficulties as well as good results.

As part of our movement we have taken a lead with what is called the Australian Green Infrastructure Council. A range of road building, train building, Leightons, these sort of players have all come to the party to form that council and it is to look at things really along the lines of green star building performance. That is for buildings, but when we look at rail, road and all those large infrastructure projects, our company has put its hand up to lead that co-ordination and so far it has been successful and I think we will start to see some outputs from that group before the end of this

year basically.

Of the three topics that I have been asked to discuss today, the first one is energy management and carbon neutral suburbs, which sounds like a warm and fuzzy topic to start with, but it is certainly a goal of ours and there are two suburbs basically on the market which are setting a benchmark in that area. The second one is building efficiency and Zero. I know people associated with this Committee, or some of you, are aware of the Zero concept but probably want some background as to how it came about and what it actually means. The third one is really my core business as much as point one, and that is potential conflict coming between an open carbon market and biodiversity outcomes and our landscape. I am a former employee of Greening Australia and a former manager of their business, so I come from a fairly passionate ground, I suppose, in that field and they have some passionate views which I also hold. We certainly have some similar views in that area. As you have probably heard from them, we have formed a memorandum of understanding so that our offsets can be as sustainable as possible, and we will talk about that in item three.

I think we should get into energy management as number one. Some of this might generate a fair few questions and I will provide answers as best as I can, but certainly some things are pretty technical. Energy management associated with developments I feel is a new area where we are trying to make some significant gains in changing the way we design suburbs. There was a key brief put out at the start of last year in the ACT for a suburb called Crace where energy management and affordable housing were the two big ticket items or key themes that needed to be dealt with to be successful in that bid. That is the next version of "triple bottom line". It hit the ground five, eight years ago in the market and has really been, in my mind, embraced quite quickly by a lot of the big players and it is almost at the stage of standard fare. Probably at the start of last year and moving certainly into this year, it is time to raise that triple bottom line up to have extra components of what we can measure and improve. Crace has tended to set a very high bar and we were fortunate enough to be engaged by the successful tenderer.

**CHAIR:** Who was?

**Mr WILLIAMS:** CIC Limited and they deserve all the credit that they are probably about to get over the coming six months for what they have done, because sometimes the aspirations of the energy management to maximise the building performance, et cetera, but it can kick your housing affordability again. So I have been given two conflicting challenges.

**CHAIR:** Is it about design of the suburb or design of the buildings?

**Mr WILLIAMS:** It includes all of it. I will just quickly step through the philosophy. The philosophy behind it, I suppose, is that if you are putting a whole of life cycle assessment on your decisions, and I think at precinct scale suburbs you should be, every product that you choose for construction needs to be considered, every aspect of how you do your construction needs to be considered after you have done your actual product selection. So we chose to have materials closer to site to reduce trip times; we chose to mix materials on site instead of having more trip times; we chose different building products that could speed up construction times so a building could be built in six weeks instead of four to five months. We threw all these sorts of things into the mix at the first two stages, which is where I see reduction.

**CHAIR:** What about the suburb design?

**Mr WILLIAMS:** The design itself considered everything to do with transport, employment, surroundings.

**CHAIR:** Road grid?

**Mr WILLIAMS:** Road grid, road grades, and I suppose this is one of those topics where you can get a thousand questions. I could say that give it as gospel we looked at every one of those parameters and how it even linked to the surrounding suburbs, existing infrastructure, everything. We will keep it at energy today, but there may be some follow-up things, economics in particular.

**CHAIR:** The road grids will relate to this. Sorry to break your introduction, but say with the energy grid, did they look at the layout of the grid for energy reduction or maximising return for lot sizes?

**Mr WILLIAMS:** They looked at the layout of the grid to reduce energy to all the dwellings and initiatives within dwellings that will supply a surplus back, and that is particularly part of the town centre. The [ACTEW AGL] down there came to the party big time for us and they are really probably setting a high bar at the moment. So it was one service, the whole lot, they could supply or return to the grid and it included gas, power, optic fibre, you name it, one hit, and because we only had one construction phase for all services, that then further reduced the outputs for carbon. So it was a real multiple effect and we could definitely talk here for three or four hours about every aspect of what they chose.

**Mr MARTIN:** Do I take from that then that there is a cost imperative in this that is acceptable?

**Mr WILLIAMS:** There is a cost imperative, but you bring in someone. In this case we got a financial institution to help back us. We have reduced home loans and [ACTEW] AGL potentially are buying back from the grid. All these things are then reducing. So in about ten years, even though each dwelling was probably going to cost around \$18,000 more, to be honest, than standard fare, but after the nine to ten year mark those lines crossed. So savings in water, energy versus the home loan incentive given to us from - I am pretty sure it was St George. I would have to check but it has usually been them or Bendigo Bank that has shown leadership in this field of green home loans. After that point you are starting to come in front, and because we are trying to tackle the housing affordability we set up education frameworks that once that passed they have paid more off their loan. So you then really start to reduce and what might have been a 25 year investment that you might not have ever thought you would see the finish, you might have pulled it in to 19 years.

Once you looked at all those aspects to do with construction and product selection and as you can tell there are hundreds--

**CHAIR:** What about design?

**Mr WILLIAMS:** Design too, then you have got to get to your constituents that might buy your product so that you maximise the behaviour of those who take up that product, take up that residence, because otherwise you may be wasting money on all the initiatives. If the people are not going to embrace those initiatives, you are not going to maximise your reductions. So the third stage in [Energy Management] is really a strong behaviour package, education package. In this project that was driven by GHD and Brian Elton of Elton Consulting. He sets a high bar in sustainability. I am sure people are aware of him, certainly the Member for Penrith here would be as he gets around in Western Sydney a fair bit. I met Brian at Second Ponds Creek where triple bottom line was first adopted. So that is how the relationship has flowed.

After we have done all that, GHD has got a big heap of technical spreadsheets that I do not understand. So I pass it to people that do and they crunch out a whole range of numbers which say if you do it with this technique, your construction costs, building costs and your offsets are going to be this much; if you embrace the sustainable initiatives, your construction costs go down a little bit, your building costs go up a bit, your operational costs go down and your offset plummets. So it was reduced by - it ended up being a quarter as much different as if it was just done in standard fare. The offset to these guys was in seven figures. So if I can reduce it to a quarter of what it could have been, there is a fair incentive for the developer to pick up if they want to go to this aspiration to be a carbon neutral suburb. They wanted to and that is the approach they took; they won the bid.

We have now commenced discussions with the Department of Climate Change, discussing how do you actually accredit this thing now as greenhouse friendly, because they are grappling with it. They have not seen a private consortium come forward with such an approach so early in the piece and their Green Paper is not even out for another fortnight or something. So it has really got them

seriously thinking.

What we do know is that we lose control of any behaviour in how those buildings operate, in this case, three years after they are sold and that is because we have got incentives and packages and pre-purchase green power and all those things for the first three years, but if we do not educate that person properly to continue with it, we lose control, so there is no chance of having any accreditation.

**CHAIR:** Are there any local authority control plans to assist in that?

**Mr WILLIAMS:** No, but in ACT you are probably aware it is a one-stop shop. There is no State level of government; there is just the Planning Department and no local councils or whatever. It has made them think a hell of a lot. They did not expect in the bids, I don't think, to get back what they got, and there are discussions already afoot about setting parameters in how you assess tenders or higher building performance targets now for the next one and the next one. None of that was in this bid, but it is certainly something that I think government has a very big chance to show leadership in.

I work heavily with the Growth Centres Commissions and Landcom and RTA and ARTC. I think all these guys potentially have opportunities to partner with, what they did at Second Ponds Creek, to introduce triple bottom line, which I think everyone would say was a success in the industry. It has been picked up as standard fare. There are a lot of opportunities to do the same to raise the bar on sustainability, energy, water supply to site, not just purely in the buildings either, and they are starting to have those conversations now in the ACT. Do we move to a four star suburb, which way is better than what we have traditionally had. It is not quite the Rolls Royce, but that could be a five year interim measure.

They are also grappling with a couple of guys like CIC in another project down there, who have come to them and said, "Regardless what of what you are saying, we are going to take it to this level." So they are in a catch-up mode, if that makes sense where there is certain leadership from private enterprise which is running faster than Government.

**CHAIR:** Is there any benefit to them at the buy-in stage to do this?

**Mr WILLIAMS:** It was a partnership project for these guys, so like Second Ponds Creek they wanted a joint venture to tackle these two issues. They [ACT Planning] now have to pay for half the offset, which is something they had not considered, \$480,000, whatever their component of it is. So they had to get their head around that component of their own joint venture of the business, but once told about the changes to construction and materials so that reduced the cost, the cost of development has not changed. It has probably dropped a little bit.

**CHAIR:** Is there any change in yield?

**Mr WILLIAMS:** Yes, and the changed yield happened to offer a greater variety of housing products. To be energy efficient, and this is something I know the Growth Centres Commission grapples with all the time, we have to forego the quarter acre block standard across our developments. This place offers two storey townhouse, pushing medium high density around town centres, all the way to a handful of luxury blocks up on the hill for those who want to have them. The income from those areas helped produce more cost effective housing, closer to transport [for low income families]. These guys haven't got cars and all the rest of it. If you are starting to afford a house, you haven't got a Range Rover and your kids are struggling to get to school. It all flows on. So the model is technical and the entire subdivision commits, I suppose, to an outcome, but it is affordable housing we delivered with energy costs to be managed, if that makes sense. It is a sort of approach that I think should become standard fare to energy management on precinct scale developments and how governments want to address or show leadership is really up to them.

**Mr MARTIN:** From our point of view we have to go the planning mechanism and get involved with councils early in their development control plans, that type of thing.

**Mr WILLIAMS:** That has been spoken about as an option at Port Macquarie. They have

entered those conversations. We are in a situation where government has shown leadership in individual buildings. They want to occupy four and five star buildings as they move to new leases. We do not have one in Port Macquarie. DECC up there is waiting until one is built to occupy premises. There is a way you can just lead the market straight away, so that is certainly one way that local government can lead, but I am not sure it is the LEP process that could set those parameters. It is the next tier down.

**Mr MARTIN:** Development of a trial plan.

**Mr WILLIAMS:** Absolutely, and it could even be on DAs if you want to get right down to the small scale, certainly with your drivers like Growth Centres Commissions and their role on precinct scale stuff. Guys want to partner with them, they want to partner with Landcom. Don't get me wrong, [I assume] Australand made some good money out of Second Ponds Creek and it is still going to make a good income from it. It changed their behaviour. [I understand] they did not lose money to change their behaviour, and I think those approaches have got the power, because the day after that decision was made I had Delfin Lend Lease, Stockland and the other four that were short listed all ring up and say, "We can't believe we didn't win that bid. What were the areas where we went wrong?" "It was social and environment because before that you had rolled these out, you're fantastic at it, but now you have got a new scorecard", and they had not adapted as quickly.

**CHAIR:** Nothing makes someone change behaviour more than the research. You have got to get the message out to say that other developers could say it is the cost, what about yield, yield or cost per lot. With Crace is CIC Limited out there publishing their reductions or their projections or their innovations?

**Mr WILLIAMS:** We have had our first workshop with the Department of Climate Change and they will be reluctant to over promote what they are doing until they get the accreditation, [at this stage all information would be available] which unfortunately for them will probably be the hardest of all the scale because they are first. In saying that, they have given GHD permission to present it to the New South Wales planning expo, UDIA, at least the principles and the philosophy.

**CHAIR:** Once you have changed behaviour at that level, it might filter down to the plumber on site.

**Mr WILLIAMS:** Exactly, and at Second Ponds Creek they had a sustainability induction for the person driving the bulldozer. That is going to have to happen at Crace, but not just on pushing the bulldozer, the emissions coming out of it, the fuel we put into it. It is going to be like raising what was done there times ten. We inducted every single earthworks contractor, every plumber at Second Ponds Creek.

**Mr OAKESHOTT:** How were they going through it?

**Mr WILLIAMS:** There are skeptics, as you can imagine. You are in a changing environment, however, where half the people have kids who come home from school saying, "Dad it's got to stop". So they turn up and they want to know, "How can I make a change?" The other half are still skeptical.

**CHAIR:** That leads me to the next question. The key group that you said GHD had a lead agency in, what was it called?

**Mr WILLIAMS:** The Australian Green Infrastructure Council.

**CHAIR:** That is a question of driving stakeholders. What is the charter of that infrastructure council? Who do they speak to? What feeds into them?

**Mr WILLIAMS:** I can give a brief response to their charter because Anthony Sprig, who is leading it for GHD, rang me this morning and said, "You might get asked these questions". So I can give you a general answer. Their charter will, by the new year, set a rating system similar to green

star for infrastructure projects and it will go up to five and hopefully fit into that sort of model.

**Mr OAKESHOTT:** Does that fit into COAG?

**Mr WILLIAMS:** Not sure on that stuff.

**Mr OAKESHOTT:** And is there a State equivalent?

**Mr WILLIAMS:** No, this is across [Australia]. So if I was to advise say RTA, it should be a player from State level, but when you have got Leightons and others showing leadership it does not matter at that stage.

**Mr MARTIN:** So it is industry driven?

**Mr WILLIAMS:** Absolutely.

**CHAIR:** But how do you rein in the HIA and all those others, and you are Joe Bloggs, the plumber, and you want to do the right thing and there is one group saying one thing and one group saying another? It depends on who your professional association is.

**Mr WILLIAMS:** It is up to this council to get runs on the board in sample projects so that others are going to ask the questions, like we did at the Second Ponds Creek. We cannot expect rapid change immediately, this is five to ten year processes to get to. Some people get quite frustrated, they want to change it all next week. Unfortunately, in my mind, it is a bit unrealistic. We need to step, step, step. They will set up what they think is a viable assessment tool to achieve each of these ratings, if it is a railway, road, whatever. A lot of the industry will be sceptical and so load costs, so we are not going to play at it, but you need to get smart in the way you discuss and counter your arguments for that.

Roads are a good example. We have constant debate internally. I have just started engaging with the RTA on this, construction, it is the upfront cost, keep it down, keep it down, keep it down, so go up a steeper hill, do not cut that bend or whatever. If we are going to build a road that has got a 200, 300 or 400 year life span, we need to consider the whole of life. So you may, in terms of energy, have to put a little bit more in the front to operate that road for 200 plus years with trucks in higher gears, less emissions, et cetera. That is what this council needs to set examples on.

**CHAIR:** Is that a council code or is that an Australia-wide code?

**Mr WILLIAMS:** This council will be looking at a green code Australia-wide.

**CHAIR:** So they are going to go above and beyond what is there now?

**Mr WILLIAMS:** Yes, and it is up to any individual to bother to achieve that aspiration or not. If you are a skeptic, you are not going to bother to even float yourself for five star.

**CHAIR:** I am thinking it would be a brave person to do that on a major road in a subdivision in relation to insurances.

**Mr OAKESHOTT:** To go against the code.

**CHAIR:** That is right. Who is going to be brave enough to do that, because it could go good or it could go bad.

**Mr WILLIAMS:** And that is why sometimes I reckon industry, when driving things, has got a lot more power because if you go bad once or twice, your bottom line plummets. After Second Ponds Creek, Australand had one, two big precincts in a row. It does not take long for the next competitor to go, "Hang on, their cash flow is looking pretty clear over there. Maybe there is something in what they are doing".

**CHAIR:** I would be then saying give me the proof that it is better.

**Mr WILLIAMS:** When we talk about this thing, you have to have science behind you and you have to have all the economic statistics, you have to have people like the Eltons and everyone else who can add values and say that we need dollars on certain things. Rob and I have had this conversation. I am sure it is going to come up in item 3. Unfortunately, these things have to have an economic value put on them, even though they might be biodiversity or intrinsic values, because when you come to talk at this scale of development or this scale of infrastructure, you need a line item in your spreadsheet which says biobanking is going to cost me \$1.2 million or offset \$5 million, otherwise we cannot cut through, and so you are absolutely right. You need the science and the economic reality of your decisions in the background.

When we talk about this thing, the science is there, but at the moment some of this is not economically viable, so they will be sitting back for five and ten years when industry or building performance or energy costs go up. That might not be as long as we think, the way the energy costs are going. Certainly you need to, otherwise you will always be shouted down as skeptics.

I am going to leave this snapshot of Crace and how we work with GA and how it all works on the ground for you. It is a snapshot. That could be a full session, there is no doubt about it. You will probably see that Cox Richardson are heavily involved. I do not think it is a coincidence, but they were involved at Second Ponds Creek with Brian Elton, with Australand and they are still involved at Crace with Brian Elton. They seem to be at the forefront and I suppose I have been lucky to hightail off the back of them.

**CHAIR:** Before we launch into part 3, if you look at the coloured part of this promotion, you have got a road grid and next door to squiggles, the spaghetti. So something tells me that this is my life. Are they energy efficient?

**MR WILLIAMS:** Are you looking at the street layout?

**CHAIR:** Yes. I am passionate about this, absolutely passionate.

**Mr WILLIAMS:** I think there is a lot of people in Woodcroft who are too.

**CHAIR:** This would be the electorate of Penrith versus Mulgoa.

**Mr WILLIAMS:** Absolutely. One project I do not want to forget in this is Ropes Crossing. It was difficult from the point of view of biodiversity and whatever, but Delfin have set some high bars in economic sustainability, place, social sustainability too. That project and the Landcom Australand [SPC] are probably a very difficult climate for those guys.

**CHAIR:** It has got to be a driver for that sustainability to get the layout right--

**Mr WILLIAMS:** Absolutely.

**CHAIR:** --because you can try and retrofit this spaghetti plate to try and be more energy efficient and you are barking up a tree.

**MR WILLIAMS:** It is the same with the suburb of Crace. You cannot get a bus through that network, you cannot get a bus through that network [of neighbouring suburbs]. The bus could not get through it. You have to pick up the bus line from here, to come out here. So we have got to shuffle our guys on a run in a U back to that point and then we would have a little mini bus shuttling because you could not get an efficient bus going, but yes, just simple things. That is why I said to you we could be here for hours on Crace, absolutely hours.

**CHAIR:** I know there is a note on the time. I think we can skip down to the carbon market. So what would you like to say about the carbon market and biodiversity?



**Mr WILLIAMS:** I will just do this very quickly because you raised an important point about innovation versus science. You can have this book.

**CHAIR:** I have got one.

**Mr WILLIAMS:** You have seen this, have you?

**CHAIR:** Yes.

**Mr WILLIAMS:** So you went to the function down there with Mr Gore?

**CHAIR:** No.

**Mr WILLIAMS:** We launched this at Our Planet last year, and we invited Al Gore down and we did it on purpose to change our company as much as let the market know we were serious, and as part of that exercise we worked with the [industry] to come up with a fictitious building. It followed the exact same philosophy that you saw there for Crace in terms of energy management. This building self-powers itself. It takes nothing out of the grid. It supplies additional power back to the grid. It has a mixture of solar and wind, and it gets all the way through to new techniques around biofilters, algae. Some of these things are right out there now. Every one of the technologies promoted in the book is available but not all are yet cost effective. So we are as a company probably relying on market forces and leadership from government and so on to make these things become more cost effective, because when you get to this end of the spectrum where you are using algae systems to clean water, to keep your building cool and funnel it back around in a system, at the moment it is a little bit out there, for want of a different term, but certainly in five, ten and twenty years, in our opinion every one of these technologies inside that period will be on the table.

This building went down to the nth degree in design, which is your point. If we did not design every single product, every angle to the light, the rest of it fails or the rest of it costs you more money. The philosophy is the same as if you were doing a suburb. There is a lot of innovation in there which is real. That is when the marketing team grabs hold of something [comment in relation to the shape of the book Zero].

**CHAIR:** They had this on display at the end of the year at the Museum of Contemporary Art.

**Mr WILLIAMS:** It leans forward, and if you cannot see it, that is exactly what it is for. Those subtle things in marketing, that is why you pay them a lot of money. It is harder to slip into an A4 folder though. That is the other thing. Yes, the [industry] were coming at us to say, "How much of this is real?" It is all three dimensional imagery. It does not exist. The government has now come at them and said this takes no land, provides all these other benefits. They have already got CO<sub>2</sub> as their dwelling down there. I suppose this is like CO<sub>2</sub> plus some, if that makes sense, taking it to the next 20 years. Discussions are that we might hold a little while and let some more of this become viable and let photovoltaic cells plummet in price and all that stuff, but there is a fair chance that they will build this thing or something like it at the moment to set a bigger bar.

**CHAIR:** Now on to the carbon market and biodiversity.

**Mr WILLIAMS:** Yes. Again, I brought a couple of the memos that I submitted to you, Rob. In a summary introduction to this topic, I was fortunate enough to work a little bit with a couple of the key guys from the DECC setting up biobanking in New South Wales. That led me to be invited to Western Australia at the end of 2006 to start looking at, "We wouldn't mind biobanking in Western Australia. How is it going to look for our State", and part of that commission involved an assessment of all other biobanking and philanthropic type models around the world.

They had a different issue to deal with, I suppose, and that was they had mining companies already embracing carbon offsets in the minimisation of greenhouse gases. They have thousands of

hectares of hybrid monoculture plantations already in that short of period of time to sequester carbon. Working with their DECC and also Greening Australia, we started to come up with a feeling that that totally conflicts with a sustainable landscape or a functioning landscape that is going to have to adapt to climate change, and to adapt to climate change, I do not think I need to describe to anyone here, but we need the opportunity for plants and animals to move north and south as well as east and west, and eucalyptus nitens plantations are not going to provide those opportunities on a landscape scale.

Carbon is a market driven force and I am sure you are aware there has already been a presale of a significant nature at \$19 to \$20 dollars a tonne waiting for Green Paper and it is not going to stop. It has gone and it is driven by a market and people are very interested to invest in it. At the moment all incentive goes towards maximising the sequestration of carbon in the fastest amount of time to offset mining emissions.

While that project was going on in Western Australia I was assessing all these things. I was also engaged by the Lower Murray Darling Catchment Management Authority to look at water allocation, flooding regimes and the impact on their agricultural landscape, and it was a confronting and quite shocking project for me to deal with socially, as well as the loss of viable agricultural land, environmental values, et cetera. I was looking at farms of 10,000 hectares that have been icons in Australia for 150 years, where if we were not getting metres of change in the Darling River [in terms of water level quickly] these guys start walking off their land. Basically, they take a small cheque and still have the debt and all those things and they are still as stressed as they were last year.

It got me thinking about what is available to help restore the capacity of these lands so that the landowner does not have to leave, we need to keep them there, because at the moment it seems to me if they leave, that is five or ten thousand hectares that no-one is going to have an incentive to pick up and restore, and that is when the penny for me dropped that if we used the emerging carbon market to fund biodiverse plantings in degraded landscapes first, this is going to have more money available for this market than anything that has ever come out of NHT 1, 2, whatever. There is an opportunity for more money than we can poke a stick at to help this situation or it can go the other way and 4000 hectares in WA will be 14 by the end of this year and 44 by the end of next year.

**Mr OAKESHOTT:** And it will be monoculture.

**Mr WILLIAMS:** Absolutely, and so you have got organisations out there at moment like Greening Australia who have bought significant biodiversity hotspots in the northwest belt of Western Australia, for example in their Gwandanaland project, and they are fighting to buy the land in the middle now before the mining company does to put its monoculture on, because they want to link two biodiversity hotspots with endemic carbon plantings, so the national park, Greening Australia belt, agriculture still remain and work together. That is their philosophy and that philosophy dropped to me in the Lower Murray Darling.

**Mr OAKESHOTT:** The public policy dilemma is that you get less bang for your buck throwing money into biodiversity than if you do straight out carbon monoculture stuff.

**Mr WILLIAMS:** Absolutely. I am asking landowners down there to forego up to \$200 per hectare per annum to plant ugly, wiggly Yellow Box woodlands which only have 400 stems a hectare, when Kyoto wants a thousand. So we have also got some policy issues that do not allow these guys to enter the market as openly as they would want without planting a modified environment. Again, Rob and I have had this conversation. If you increase the amount of emerging trees per hectare, you draw more water out of your system, the Darling gets less. It only exacerbates a whole heap of already pressured problems. Yes, you can get water tables down, so you might help with salinity and you would probably help with some nutrients, because they will still take them out of the system before we hit the Darling, but that is probably where it stops. We are not going to get connectivity for flora fauna movement. We are not going to let these guys actively play in rehabilitation and farm.

**CHAIR:** Will we see this in a Green Paper hopefully?

**Mr WILLIAMS:** It is the hottest item to be discussed at the moment in the Green Paper.

We have recently employed a fairly senior person out of the DECC to come to GHD and it had not been settled at the time he left. There is a lot of passion that government needs to look at incentives to close that gap to embrace the biodiverse plantings. The market will probably go from \$19 [value of first pre-sale] to \$30 within less than two years from the day they give [the green light to the] actual trading scheme, so they probably got a bargain.

That then starts to further grow this gap if we are always looking at carbon under the pretence that we have to sequest as much as possible as quick as possible. I think there is a range of opportunities again here for government where we can look at emerging policies or existing policies like biobanking. They were driven purposely to look at the degradation of remnant vegetation and it is a powerful tool for remnant vegetation but it has not considered revegetation. So if we are going to link valuable remnants, they can be linked by forestry operations or they can be linked by biodiverse systems that can still allow for some agricultural activities. We know how the northwest and southwest regions operate. It is not put a fence up and no-one can go in here and have any agricultural input. We can manage those agricultural landscapes a little bit different to probably a kikuyu paddock, and that is just the nature of that landscape.

That is one opportunity. There are other opportunities I think to assess offsets before the Government makes decisions on the next mining operation or whatever and you can assess the offset for sustainability. So you put imperatives almost on your assessment tool, so if someone comes back and says, "I can achieve my target in 20 years if I plant hybrid eucalyptus nitens" and yet when you feed it into the score and you come back, your imperative means that you need either to provide another financial incentive or bigger area or more land acquisition or you start to feed them back to the biodiverse outcome as well at the same time. It is a difficult field to play in because markets are markets and government make policy.

**Mr OAKESHOTT:** That is the role of public policy, to shape the playing field, more a public benefit.

**Mr WILLIAMS:** I almost feel governments are obligated to look at what is happening in the market right now and look at opportunities to maximise the carbon market. I really do. That is my personal opinion. A lot of people in GHD support it. There is a handful that probably do not. Otherwise you will end up in a situation where, and we are already feeling it, significant carbon investment is coming out of Europe, et cetera. They see Australia as an active place to play. We have people talking to us in the - not the millions - the billions just to offset carbon in Australia. Renewable energy opportunities and biodiversity of carbon offsets are way down the end. Yes, they should be investing in all those other things too but we have got to pull out the stands of monoculture from such a large scale investment, because that is literally thousands and thousands of hectares that could go on those books. We have got to convince them at the moment that that is not the right thing to do for that part of your investment. I cannot convince them with any policy and certainly on economics or speed of carbon I cannot. I am going to lose both those debates. So it has to be, in my mind, a co-ordinated answer that we have a degraded landscape, we need to adjust for climate change, we need connected landscapes. We have to have values on all those things. And people are talking about salinity credits - you have probably heard that term - and water. There is probably a whole range of natural resources that this market will probably take more seriously at their true value.

As I said before, in the development field I cannot get anyone to listen on that scale of development approach without having those line items in the spreadsheet. It is the same when I am talking to a huge investment from Europe. They have got this many million tonnes of carbon, this much money. You get to that, sequest that as quickly as possible without pocketing the money and that is in simple terms the brief. You end up doing things where you probably have to turn around and say at the moment those hybrid Blue Gums might be the only way you are going to get there. We do not single out any individual offset, don't get us wrong, because every client has a different perspective, but from a sustainability perspective it makes us seriously question a lot of the approaches that come to us, that's for sure.

**CHAIR:** What would assist to get the balance right?

**Mr WILLIAMS:** My feeling is I think there are some opportunities on the back of the Native Vegetation Act and biobanking to improve revegetation, linking, corridor, whatever terms you want to give it. It was not the first thought when the policy was being designed, and so, as I always say to the guys in Western Australia, you are always going to learn a lot from someone else being first and I encourage the policy, to be honest, when it is a good outcome, but it is a shame when it was in its infancy [revegetation wasn't adequately considered], and New South Wales is not under the same mining pressure. We didn't see, I suppose, Western Australia on our landscape in 2003 or 2004, and I think that is when Richard and Tom took off on this path, and it was American based, and it is philanthropic in America. It is a differently driven market. We are going to drive that policy and take up through the likes of UDIA members and how they buy and trade, but it is a different philosophy behind it. So I say to them you can always go and pick holes in the first, because they have got a fairly good model there, but I really think there are some opportunities to refine it so that offsetting includes revegetation and I am sure there is some way that the carbon market that can be linked to the biodiversity market. That is probably a federal issue.

**CHAIR:** Is anyone else advocating it?

**Mr WILLIAMS:** Certainly the person we employed who used to be in charge of Forestry Sinks at the DECC has, and that is why they have a fear that it is not answered in the Green Paper. It is hotly debated.

**Mr OAKESHOTT:** How can it be debated, in that just let the market deal with the market?

**Mr WILLIAMS:** Yes, we are a capitalist society. If you create a market and then you are dealing with 50 imperatives, well, is it a market. We have a problem in our nation with the degraded landscape and all those things as well. We would obviously love to grab European money, I would think, and fix the northwest and fix the Lower Murray Darling but how you do that when you are in an open market. It is a tough world.

**CHAIR:** Are there any international people considering the same points of view that you have been expressing this morning?

**Mr WILLIAMS:** Yes, absolutely.

**CHAIR:** Where?

**Mr WILLIAMS:** They met at Bali and Marrakech. They are on the round for the next round of Kyoto, how we deal with this, even just things like a thousand [trees per hectare] on the table, soil, in or out. Right now you have people in northern Queensland who cannot even enter the market because they only have one tree per 100 metres squared.

**Mr MARTIN:** When you say soil there, is that soil carbon?

**Mr WILLIAMS:** Yes. Jock Laurie, his stuff was really good for you guys. He is obviously well aware of what is going on and how it could impact. His attitude is, "If they do not listen and understand what I am saying is they are not going to be around in agriculture in 15 or 20 years anyway." It might be a little bit of a forceful attitude but he is right. Mildura will be at its knees in five years, for example, if we do not turn things around. Mildura is like Griffith as a flagship fruit production area and then you have got grapes only, and grapes are the hybrid so they use less water now, so they are not even getting the dear grapes. Brown Brothers and that down there are struggling. If you talked to someone in Mildura 20 years ago and asked them where they would be sitting in 20 years time, I am sure you would get a different answer to what has happened, and that is just being at the end of everything else. All of our flood modelling and everything we did for the Lower Murray Darling indicated that that is not changing for those guys unless you take some serious decisions north of Broken Hill in water allocation. We are about to say to them pretty openly, "You are in a tough situation. You might have to choose between returning previously ephemeral or aquatic systems to terrestrial, but they are not going to be filled once every two or five years, it is going to be once every 20." Now that these decisions are being discussed and around the table, it is causing people to think.

I wrote the report that said you may have to consider these things. I would hate to be the one who says it is a foregone conclusion, we are going to have to put all those that used to be Red Gums to Yellow Box and Black Box. That would not sit pretty with me from an environmental perspective, but we are not far away from someone having to make that decision and for those guys it is a serious issue and that is why I think carbon can help, water can help, different use of water allocation, all sorts of things but what I do see is that if we give them any incentive to plant other varieties or other types of carbon offsets, it is only going to further degrade.

**CHAIR:** Is anyone researching this?

**Mr WILLIAMS:** The CSIRO has been active down that way obviously and there is a lot of bird work too, you are probably aware of, from the Murrumbidgee, Lower Murray Darling. David Freudenberger and all these sort of characters from the CSIRO linking birds and their movements, trying to understand. There is a lot of science in the commissions that the CMA has been giving us. It is the biggest commission any CMA has put out there in one writing, and we commended them because they are big issues. You cannot have five or fifteen thousand dollar looks. You will not come up with any real data. As far as water allocation and flood data, that is in existence now and when you see the flood plain map from pre 1944 and you see our predicted one for water, for a one in 20 year event and a 100 year event, it is a frightening sight, because it means that all those landscapes outside of that are not going to get that flush and nutrients and a little bit of top soil and whatever, which gives them the energy to be more sustainable in farming. So not only are all those guys not going to get water, they are not going to get that little bit of top up that all of our flood plains have adjusted to. We sit on the banks of the Macleay or the Hastings and they just grow like wildfire because we get topped up with beautiful soil. Every two years or something we spill out.

**CHAIR:** Given the brief of our Committee, we are doing one inquiry at the moment but that does not stop us doing another one. If we are not in contact with you soon, we may be in contact with you a little bit later on to see how we can link another inquiry to assist those outcomes that you are achieving.

**Mr WILLIAMS:** As I said with the suburbs, they are challenging, but we are not going to answer them quickly either. I get frustrated sometimes and I have got to say you cannot change the Lower Murray Darling tomorrow, so just step back and every inch you grab and every CIC that comes up, every time you have just got to, in my mind, pick them up, give them the marketing and all the exposure they deserve, so that the next person picks them up. The best thing we have now is kids who come home with more education than we had.

**CHAIR:** We have got to get the planning and that layout right.

**Mr WILLIAMS:** Yes, planning is critical. Some people are hesitant to spend a few extra dollars at that stage and yet if you can say to them but operationally you are going to save thousands.

**Mr MARTIN:** Is that a level in terms of public policy where governments can intervene? When I say intervene, to set--

**Mr WILLIAMS:** Yes.

**CHAIR:** Instead of putting this pressure on yields, an amount that LGA has to provide might help.

**Mr WILLIAMS:** The Growth Centres Commission is a prime driver and I saw there was a question about our operations [with them, in a previous interview]. They could set incentives for a greater diversity of housing which gives companies like GHD and Elton more flexibility, and to do like we did at Crace, mould it all into one bigger package, and these guys did not give up that much profit margin. They will be standing up there next to Penny Wong once they get greenhouse friendly accreditation, and they should.

**Mr OAKESHOTT:** And who knows, it might actually be really attractive.

**Mr WILLIAMS:** That is right. I would say the houses up the top, they will get more than the surrounding wiggly streets. What we found is aesthetics is important for social outcomes, a lot of education, aesthetic social values down there. [With the surrounding rehabilitated open space], we are not trying to hide ourselves. That is probably what it looks like, probably trying to plant yourself in, but we want to interact with a whole range of social and educational opportunities, walks, because you can actually touch a bit of nature in the urban environment if you build it in and consolidate some of the others.

**CHAIR:** If you get away from your quarter block, you cannot play cricket in your two storey town house, you need somewhere to--

**Mr OAKESHOTT:** A park.

**CHAIR:** And that connectivity, you have got to get to that park. Like a councillor colleague of mine once said, "They can get in the car", and I said, "A five year old cannot drive".

**Mr OAKESHOTT:** You have got to operate bipartisan--

**Mr WILLIAMS:** All that stuff and it links the active and passive. Those two spaces on there, the light green is active, so we even partnered with the rugby club, and all these things, so they have active use down there. You have got to get smart and meet your childcare facilities for those sites because parents want to be fit, instead of having to drive all the way that way to Belconnen, turn around and drive all the way back.

**CHAIR:** Which is energy.

**Mr WILLIAMS:** So then it goes back to sustainability.

**CHAIR:** And what is the orange?

**Mr WILLIAMS:** Town centre. That is real high density stuff in there. That is where there are the forum, shops.

**Mr OAKESHOTT:** It is a bit hard to read down here. That red dot, is that existing parks?

**Mr WILLIAMS:** Yes, they are existing protected areas which they wanted to link around the outside so that if someone wants to walk from there to there or fauna or whatever, so we linked two existing parks there for open space.

**(The witnesses withdrew)**

**(The Committee adjourned at 1 p.m.)**