

Australian Cities: Liveable and Sustainable?

- Professor Peter Newton

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Transcript

Australian cities rate highly internationally on liveability and well-being indices. State and metropolitan governments are keen to promote the liveability of their cities as a means of attracting mobile capital, skilled labour and tourists.

An examination of the liveability-environmental sustainability nexus, however, suggests that Australia's capital cities have gained their high liveability ratings while having high, and now unsustainable, levels of resource consumption. There are different ways to maintain liveability, while winding back unsustainable consumption.

Professor Peter Newton explored three of these pathways for Australian cities: technological innovation, built environment innovation and behaviour change.

About the Speaker

Professor Peter Newton holds a research appointment in the Cities, Housing and Environment Program in the Institute for Social Research at Swinburne University of Technology. Prior to joining Swinburne in December 2006, Peter held the position of Chief Research Scientist at CSIRO, where he led the Urban Systems Program.

Speaker: Peter Newton

Moderator: Jane-Frances Kelly

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JANE-FRANCES: I'd like to start by showing my respect and acknowledge the traditional custodians of the land on which this meeting is taking place. Welcome to *Australian Cities: Liveable and Sustainable?*, from the Grattan Institute Cities Program, which is of course Grattan's coolest program. I'm Jane-Frances Kelly, the Director of the program. It's a pleasure to welcome Professor Peter Newton. Peter holds a research appointment at the Institute for Social Research at Swinburne University of Technology. These are highly prized and sought after research positions, so - and various people who have them, and it's an extraordinary luxury as an academic to get them. He's the author and editor of more than 20 books on cities, planning and sustainability. Before he arrived at Swinburne, he was Chief Research Scientist at the CSIRO and where he also led the Urban Systems Program. He is the author of the 2001 and 2006 *Australian State of the Environment Human Settlements* reports and more recently of *Transitions: Pathways to More Sustainable Development in Australia*, which he'll be drawing on this evening.

Other activities: he's just finishing an ARC Discovery grant that started a couple of years ago on the determinance of resource consumption and the ability of behaviour change, technology and urban design to reverse consumption trends. He's also been working on urban greyfields redevelopment which involves Swinburne, DPCD and several municipalities in eastern Melbourne, and I believe there's some DPC people here this evening. They're in disguise. Welcome. And just yesterday he won an ARC Discovery grant for half a million dollars to work on the green economy, along with Peter Newman who's based in Western Australia, that's right?

PETER: Correct, yes.

JANE-FRANCES: And he says that this will finally convince people that Peter Newman and Peter Newton are two different people

PETER: That's true.

JANE-FRANCES: It's not true and I completely deny it, that when I first got in touch with Peter Newton I thought he was Peter Newman, because I had already met Peter Newman over in Perth. We met Peter, this Peter, fairly early on in the piece when I had been working for Grattan just a few months. We haven't had enough of the pleasure of his thinking yet in the Cities program, but we do fully intend to. But very, very quickly, you could see ... I just sort of looked into his eyes and thought my God this man understands some of the things I am saying, I want to get to know him better. So Peter, welcome.

PETER: Thank you.

JANE-FRANCES: We usually do Grattan seminars in a kind of a Q&A format, that's what the ... was it ... who was it you were suggesting, the two singers were? Sonny and Cher kind of stool arrangement is going on here. And we usually also kind of don't let our guests use PowerPoint. We're not going to do either of those things. I had completely threw up the white flag this afternoon and said that's absolutely fine. I can't pass CSIRO training in the way of presenting, so what we'll do is Peter will speak for about 30 minutes. If he's still going at 35 minutes ...

PETER: I'll stop.

JANE-FRANCES: ... I'm just going to like call a halt and we'll kind of ask for questions at that point. And can I also just say that we are recording, so please switch your mobiles off. And I think I will just hand over to Peter at that point.

PETER: Thank you.

(Applause)

PETER: So do we have a mic? Good. Another reason why I'm a bit shy of Q&A, I don't know who watched it last night, but keep your shoes on. That's why I'm standing back here. So liveable and sustainable is the question for today, and I did structure this presentation as a result of a half a dozen or so questions that Jane-Frances, you know, sent me once she had the title. And so I've structured my presentation around that and will move quite swiftly through it, really. So we start off with just a question, what are these key concepts? And COAG has identified these two along with three or four others as critical performance criteria for the planning of Australian cities into the future. And today we'll just focus on two of these and how they relate to each other. Though if you've had a look at the State of the Cities report that came out earlier this year, you'll notice that each of those critical performance areas occupy chapters in a sense like silos, there were a range, a plethora of indicators against each of those key performance criteria. And I tend not to see cities in terms of these kinds of silos, they're really the most complex systems that we have on the face of this earth. This is how I tend to represent cities, this is how I've come to understand them. Peter Newman and I back in the mid '90s crafted this kind of diagram to represent the city system. And as you can see in this corner, this is where liveability is largely concentrated, but liveability is not the whole story, although I think many politicians and mayors just like to think of liveability rather than perhaps some of that larger picture that brings into question issues of sustainability, the extent to which our urban system, how effective it is in drawing on resources, using those resources to supply a whole host of things in housing markets, transport systems, energy, health, etc which contribute to the liveability of our cities and the extent to which these systems are efficient in being able to recycle or reuse rather than just dispose to the receiving waters, air or soil. And that's really kind of the sustainability cluster of areas.

So that's the domain in which we're talking this evening, and really there's a whole range of liveability indicators that you can draw on and that's not my purpose this afternoon. But this is a set that have been developed by the McCaughey Centre at the University of Melbourne by John Wiseman and his group. And there's a rich set of information that's been collected against all of these particular indicators to the level of local government areas. So it provides an opportunity for trying to examine and understand liveability in its range of dimensions across a city to see what the variability in liveability is and trying to understand the reasons behind variations, and as a basis for being able to intervene in certain ways to try and improve.

Another liveability rating that all are familiar within Melbourne because it's the one that in about 1990 I think, roughly, designated Melbourne as the world's most liveable city. And these are the attributes that they drew on to make that judgement. It's a state that's done roughly annually by the economist intelligence unit and is widely disseminated and it's something that the Lord Mayors of Australian cities tend to like because it puts most of our cities in the top 10 of those 140 internationally. Melbourne's no longer number one, according to this particular rating, but three is not bad. So, that's a little entrée to liveability.

What about environmental sustainability? Well in similar fashion you could go to dozens of indicators. They're developed in most jurisdictions. The Australian Conservation Foundation earlier this year produced their first ever set of sustainability indicators for Australia's capital cities. And they had a whole host of indicators that they identified as significant, and rated our capital cities accordingly. The metric that I have used for the analyses that I'll speak about this afternoon uses ecological footprint as per Wackernagel and Rees, and widely used in Australia. The EPA website is a good place to go if you want more information on that. You can be critical about all of these indicators, but to a certain extent, liveability can be approximated by the economist intelligence unit set, has the advantage of being across 140 cities internationally. Likewise the ecological footprint is a metric that is more widely available, so if you want to do international comparative analyses at the metropolitan level, the city scale, they are the two that I've chosen to focus on to show you what ... how they relate to each other.

The stats here, 6.5 hectares per person is Australia's footprint. So on average each of us require about six hectares of the earth's surface to support our lifestyles in terms of the consumption that we undertake. That's the concept behind the ecological footprint. It's a measure of resource consumption to support lifestyles with a given level of technology. According to the formula that Wackernagel and Rees used, the world average is about 2.2. So Australia's consumption footprint is about three times the world average. And the reason that you see that three and a bit Earths is that that's a way that a number of groups, such as the World Wildlife Fund have tended to try and drive home the significance of the size of footprints in different societies. The idea being that if every person on the planet aspired to living the lifestyle and the pattern of consumption of Australians, you'd need another three Earths to supply the kind of resource flows that would allow everyone to have that level of liveability and to allow cities to develop to the standard of those in Australia. Given that resources are required to build the built environments, resources are required to service the kind of consumption patterns that the residents of those cities have.

So, how liveable and sustainable are our cities? Are some cities doing it better than others? To the extent that we can utilise the liveability index for 140 cities and the ecological footprint for those cities and countries, this is the kind of matrix that we have. And usually it's good to be in the top right hand corner of matrices. Those of you who have been in major corporations, the place to be is top right hand corner. Not so in the context of a sustainable set of cities because what this means is that our cities have high liveability, which is the vertical axis, but very high, highest levels of resource consumption going into our built environments to provide what we have here, as you look out these windows, and also to supply the kind of resources that go into your lifestyles and your consumption patterns as you go about your daily activities. That's on average. There is variability in all of this.

These are the cities that are in the various quadrants. This is 2009 data, so we're in the top quadrant one high liveability three planet living. If you have a look at quadrant four you'll find that there's ... there are no cities that operate in that space. So there are no cities that are able to deliver high liveability at one planet levels of consumption, although there are some cities that are offering high liveability within one to two planets. So there are a whole lot of lessons that we can learn by trying to understand how other cities have planned themselves, and operate. And Jane-Frances' report that was launched a week or so ago, you know, is just one further way in which you can have a look at the comparative performance of different cities. And so that's worth doing.

What drives my research is how to maintain liveability but rapidly shrink back our pattern of unsustainable consumption. And this leads to the three pathways that I've identified from my

research, that guides my research. Maybe there are other pathways that would be good to hear about those from people in this audience. But the first of these is technological innovation, so the extent to which new technologies and processes can deliver services with a much smaller ecological footprint than others more eco-efficiently than others. If they can, you should be looking to substitute them when those that are currently in play are beginning to fail. The second pathway is how we plan and design our buildings and our cities, how we organise all of the different elements of this can result in higher versus lower levels of liveability, high versus lower patterns of resource consumption, and I'll illustrate that a little bit later on. And the third pathway is basically how we behave, what our attitudes and values are and how we consume. And the extent to which that can be changed.

I'm not really a mathematician, but this is about as high math as I go. These are the three arenas of technological innovation: urban planning and design and household consumption. They're three critical arenas where change needs to occur. The rate of change in each of them is quite different to the other. It takes a long time to replace your urban infrastructures, the urban technologies that support our cities. The way in which our cityscapes can change in terms of new property development is more rapidly in comparison. The fastest arenas that could change is that in terms of how we consume.

So delving into the technological innovation, three horizons of innovation is what I have tended to identify. The first horizon basically are those technology products and processes which are now commercially available and perform better than those that are generally also operating. So your water efficient appliances, your energy efficient appliances, your rating tools, all of these things really are horizon one and should really be in play quite universally. Now horizon two innovations are those where there are a small number of examples in place, so some of the more sensitive urban design and energy, low energy precincts that you might find in some of the greyfields ... the greenfields precincts are examples of, in a small number of places, where you're attempting to be more effective in terms of what you are putting in place, in terms of their cost and also their environmental performance. They are generating important information in terms of their performance. As that information becomes more understood and as seen as a viable way forward, they then become horizon one innovations and become more disseminated. Horizon three are those that you find typically in laboratories, in universities, CSIRO, advanced industries, in a prototype form that are looking for field trials to begin to create that process of gathering data, being able to assess how they perform from an economic and environmental perspective, and then they become horizon two and so forth.

In the transitions book I go, you know, assemble a lot of information about all of the key urban domains in relation to horizon one, horizon two and horizon three kind of products and processes. And the principle that I'm I guess promoting there is that for a city to be sustainable, its managers of utilities and the urban process should have a very good understanding of the pipeline of innovation across those three horizons of technology. So when existing technologies begin to fail or show signs of failure, you have a fairly good idea as to the pathway where you can do some substitution more rapidly. And so you don't get into a hiatus where you're suddenly having to perhaps take a second or third best option in order to forestall some kind of problem. I haven't got time in this presentation to go through each one of them but in terms of a horizon three future, really they do offer the prospect of a very positive environmental outlook into the future if we can actually get there within the window of opportunity that doesn't cause a whole lot of, or permit a whole lot of economic and social dislocation. And then you go through the other domains of transport, buildings and urban development, which I'll get to right at the end.

The second pathway relates to how we plan and how we design our buildings and our cities and there are innovations that are possible at the building scale and the precinct scale and also the urban scale although I'll focus on the first of these two. Very sad, a couple of months ago with finding out that Bill Mitchell, Professor Bill Mitchell from MIT passed away, about 64 years of age. He's a Melbournian, educated at Melbourne University and then Cambridge and Berkeley I think and then MIT where he was Professor of Urban Planning and Design and head of their media labs. And I had the privilege of spending a number of periods of time here and in Boston with Bill Mitchell. And really that's where I developed the ... his concept of being able to represent cities as objects which ... it's kind of a technological perception, but if you can represent your buildings or your cities as objects, and if you just have a look around in this

room, they're full of objects: the chairs that you're sitting on are objects, the window frames are objects, your panels in the roof are objects, even all of you are objects and can be represented as such and modelled as such. Provides a very rich environment for modelling buildings and urban systems that we didn't have when I was going through my training at university. So at places like the CRC for Construction Innovation where I was for seven years, we did a lot of innovative work in developing systems that would allow us to essentially automate the performance and the visualisation of buildings before they're actually built. So how will they perform? And that introduces kind of another principle that I have for sustainable cities, that if you have the capacity to divert your modellings of your designs, in real time, direct from 3D CAD, at the press of a button in the same way as you do with a spellchecker, get the assessment of the costs by going to a cost database, go to a lifecycle assessment database to get your assessments of the environmental signatures of your buildings or your assemblies, whatever scale is relevant, you then have the basis for making comparisons to say well can we design something, can we rearrange, can we substitute materials and make a comparison between, you know, design mark one versus design mark two versus design mark N. Whereas at present there is not a whole lot of this being done and you rely just on one kind of check box system often to make the assessments.

Another kind of innovation in the planning and design kind of straddles a number of scales because innovation is required and can be delivered at the building scale, the dwelling scale or a precinct scale and the jury is still out as to what is the optimal scale at which you would innovate in terms of your water systems or your energy systems and so forth. But the bottom line is to decarbonise your housing stock, you need to have an energy efficient building shell that delivers better comfort to those that are living inside, you need energy efficient appliances, you need to draw on some form of local energy generation whether it's attached to the building or whether it's drawn from a precinct, a type of technology. And so that's what we call a hybrid building in the sense that it is linked to the grid so you can draw on the grid when you have problems of failure, but also you can supply the excess renewable energy that is generated to the grid. And what we're able to demonstrate to the federal Department of Environment and the three state building departments is that you can actually identify pathways to carbon neutral or zero carbon, whatever kind of target that you're establishing for your housing that actually makes a savings of about 1.3 tonnes of carbon per dwelling. At the worst end is the kind of the clunker homes that in the worst possible scenarios of shell, appliance, operator, can generate as much as 50 tonnes of CO₂ per year. Current project homes in Melbourne effectively generate about nine and a half tonnes of CO₂. That's without any kind of local energy generation or other innovations.

So, taking us closer to the city, what do we look like? This is a major issue that's in the press almost continuously. And the prospect for continued outward growth would be if you can't develop more of your housing and related development in what I call the brownfields, Docklands is a classic example of a brownfields development environment or arena. Greenfields you know, that's where the fringes of our city keep on being developed, and horizon three is the greyfields. And that's the really problematic area that all governments and metropolitan planning agencies are struggling with. They're the occupied but failing physically and technically housing stock but they happen to be occupied. And so it's a matter of how do you regenerate housing precincts when people are in them. In the greyfields there seem to be three arenas in which planning and innovation is attempting to take place. Activity centres have been around for a long time. They seem ... that's probably the only thing that's endorsed in a bipartisan fashion at the moment between the two parties. If Baillieu comes in according to what he's been saying the last few days, the tram corridor intensification is likely to fall off the table, so one of the opportunities for intensifying out city along tram corridors may well be lost.

The third arena is the housing precincts, the greyfields and this is where Ron Wakefield from RMIT and Shane Murray from Monash and I are doing some work at the present time, because really the activity centres are failing to attract the regeneration. Most of the regeneration is occurring outside of the activity centres and not on the transit routes, even if transit routes out at the city of Monash were likely to come into play, which they're probably not. So you have to look at some more effective, more optimal way of regenerating housing precincts within certain areas of our greyfields. And the analyses that I've done of housing in Melbourne using Valuer General data suggests that there's a quarter of a million properties where virtually all of the value in

those properties resides in the land, not in the built asset. So that should flag the prospect that they could become a focus for some form of regeneration, not only in terms of housing at higher densities, but also different energy systems and water systems if you can develop, identify precincts. So that's where we're at at the moment in terms of investigative panels. As you could understand it's a very contested area but we're looking to see if you can develop a new model or a process for greyfield regeneration. Because these are all of the players and it's a matter of how you can capture value that can be distributed to all of the people who will have to play in this space, not least of which are people who actually occupy these greyfields houses. How do you encourage some of those to begin to see a prospect for regeneration in their own area?

And finally, what do we do about our own human behaviour? What are the kind of things that influence our resource consumption? And here I'm talking essentially about energy, water, domestic appliances, the carbon intensity of our personal travel and our housing space. So how much of what we consume on an annual basis, for example, in each of those areas is due to the kind of attributes that we have as individuals? Our age, gender, background, value, how much is due to our attitudes and value systems? That's another block of potential factors that influence maybe, according to literature, your level of consumption. How much is due to the kind of household that you're a part of? How much consumption is actually designed into our cities and our houses? How much of the consumption that comes through on your weekly or monthly bills are really a reflection of the kind of dwelling, the quality of the dwelling, the performance of the dwelling that you occupy as distinct from the level of comfort that you want to deliver by bringing in resources that relate to water. And how much is due to where you're located within the city? How much of your consumption is reflected in the kind of modes of travel that you're required to participate in. So we thought that information on this would be important to guide public policy in terms of where it's best to intervene and perhaps how best to intervene.

The results of our study which is based on a survey of 1,200 households across these six kind of archetypal residential settings which take you from the high rise Docklands to your medium density inner east Melbourne to your kind of greyfields precincts in Dandenong and Murrumbeena, out to Pakenham and Rowville and Aurora. And the modelling that we've done in a nutshell reveals that, you know, one approach to reaching out to households because households, as you can see, really are the critical factor in explaining the level of resource consumption in all of those particular domains. There are kind of other factors that come into ... into play, in water, the dwelling context. If you're in a detached house, for example, higher water consumption per capita, typically you have a garden in that space and people like to keep their gardens alive so water consumption is higher. With energy, some of the individual demographics and attitudinal variables can come into play. So maybe those that are constructing advertisements about black balloons may have an idea as to who they need to target. I don't know whether they've done that kind of thing, I don't know how successful black balloons has been. Their evaluation studies aren't publicly available. Appliances are pretty much tied to household attributes. With the carbon intensity of travel location begins to kick in, but again the nature of the household is still very important in that as is with housing space. So there's a lot more that could be said there. There are papers on all of these for those who might want to get some more information.

Now, there are many models for behaviour change and this is probably not a very good one, but since we've been talking about kind of three horizons or the different levels of challenge, if you don't have any knowledge or awareness you're unlikely to be attracted to make some changes. If that elevates to a certain level of concern, maybe that also triggers a desire to actually undertake some kind of behaviour change. So it's in that third horizon of what you ... we actually decide to change the way that you consume or behave or locate that we need to get to.

So are Australians concerned about the environment? Well, about 80% say that they are. That's grown significantly from a low of the mid 50s about four years earlier. So the continuation of drought, bushfires, all of the kind of things that were around at the time of that last ABS survey, because that's the only survey that's continuously mapped concern over that period of time, suggests that we are concerned. We're beginning to indicate that we're responding, they're the kind of responses in our surveys, to reactions to environmental concern. But when the rubber hits the road, when you try and drill down in terms of what areas you would be prepared to actually change, recycling and buying local products and green labels, plastic bags substitution

maybe travel a little bit by car but by then you're kind of into that 50/50. All of the other ones above that, you find there's much more resistance to changing. So there is this gap that we have between our attitudes and values and our intended behaviours and what we might be actually doing. So that's a major challenge and we have to really understand what the barriers and constraints to transition of behaviour are. And from our survey, they're pretty much the showstoppers in terms of those kinds of things that our survey has indicated causes a problem for people to be able to make a change in actually how they consume resources. And these are the kind of things that we need to spend more time working on and understanding.

The final question that Jane-Frances posed was what's stopped us making these changes? Well there are a lot of things, but this is the final slide and I guess all of us, you know, would really hope that we could accelerate change in all of these areas and get some significant transformation that relates to sustainability. Maybe we're going to be based in a lock-in situation with some of these innovations. There might be a backlash unless you really understood what was behind it. And I guess what we want to avoid is system breakdown. So with that I'll finish and ...

JANE-FRANCES: Thank you.

PETER: ... thank you.

JANE-FRANCES: Fantastic timing.

(Applause)

JANE-FRANCES: Come back and have a seat.

PETER: Yeah.

JANE-FRANCES: Be Sonny again. I am going to ask you my first question and while I do that I'll ask people to have a think about what they'd like to ask. We've got just over 20 minutes. What we generally find is that the way that the piece of question asking works is that a couple of people ask at the start and then about two minutes to the hour, half the room have their hands up, which is kind of ... sort of frustrating for the people who then don't have time to ask. So please do kind of, you know, get in early, as it were. And while you are thinking about that, and, oh also when you're asking, Liz at the back, who's raising her hand with the microphone in it, there you go, at the moment, will come to you with the microphone. We're recording this for a podcast. We get lots of downloads and so it makes a lot of difference if you wait for the microphone before asking a question because then people listening know what the question is. Just tell us who you are and you know, where you're from if you like, but you don't have to, it's not a requirement, if you'd rather be in disguise. With this accent that doesn't work for me. The ... and let us know so Liz will come to you. So the first question that I'd sort of like to ask, the report that we published last week, did I mention we published a report last week, was saying our decision making arrangements in cities in Australia up to dealing with some of the hard choices that we're going to be facing in cities in the near future, and you've given us a really rich description of one of the most important and urgent of these challenges. Do you think our governance is up to it? And if not, what would you like to see? It's great to be able to ask this question of someone else.

PETER: Well there ... one of the barriers that wasn't in the last slide that came from individual residents relate to the decision makers that ... and the stakeholders that are really in play when you're talking about buildings or subdivisions, neighbourhoods, etc. That's where it comes, for me, into starkest play, because there have been some good movements in relation to getting high performing buildings over the last decades. It's been very difficult, it's been, you know, clawing all of the way. And as I said before, or maybe I didn't, we have a five star energy rating system for housing as of 2003. The benchmarking that a number of people in ... at RMIT have done suggests that we should be at seven star. We're moving to six star. If you attend Ministerial round tables occasionally like I do where you've got CEOs of the major developers, they have solutions to seven star housing, you know, already that they could run out. But for some reason there are key lobby groups that exist in that sector, as they do in the energy

sector. If you want a really good insight into that read the book *Scorcher*. That's a really good insight. But they exist in all of the key sectors and they are a major break on transitioning to better performing futures, whatever is in that futures box.

When it comes to a broader and more complex planning issues and there are quite a few familiar faces of people I've known for a long time in DPCD and elsewhere that have really, you know, striven to make change. And that's where we are in the greyfields at the present time. There is no bipartisan kind ... there's no bipartisanship. I would tend to agree with the conclusion that you had in your report from last week that irrespective of the kind of governance structures that we kind of understand in terms of whether you have an overall authority or state and local governments or large number or small number, if you don't have a bipartisan attitude in terms of what we think is going to be good for our city in the long term, well we're going to really struggle, because many of these changes take more than one electoral cycle to get through, as you've commented and, you know. So if you have an idea as probably many people in this room as well, it's ... you know, you've been working in areas and you understand where it's important to be sooner rather than later, the question is how do you get there. So the way that we're going about it in the greyfields is to basically have lots of workshops and interactions with the people who are actually involved in operating, in finance, in building design, in development, you name it. There's dozens and dozens of categories. It's a matter of getting ...

JANE-FRANCES: And the residents as well.

PETER: And the residents, they're part of the cycle. And it's a matter of trying to identify innovative thinkers in those spaces. Of course what we're effectively setting up is a shadow process. We're drawing in perhaps not the usual suspects that you would find around a Ministerial round table. They're people who understand their sector or their area very well and know that there needs to be change and they're prepared to, I guess, share of their knowledge as to how that might occur. So as a result of this, you know, working outside of the process in a sense, we're trying to identify and work through where there are barriers and if there are barriers, well what is ...

JANE-FRANCES: How can we get around them.

PETER: ... how can we get around them or through them, or whatever direction you need to take. So by the end of the day we can present a process that's been well thought through and well ... kind of had a good set of sounding boards. And ...

JANE-FRANCES: Yeah. And is more likely to stick that way.

PETER: Yeah.

JANE-FRANCES: Okay. Let's go to the floor now. So Liz, here's the first one up here. We might take two questions at the same time, so this gentleman here with the green collar, and then Liz after that behind you with the sort of pink shirt. Then down here at the front. So we'll take two questions. If you could be brief and I will also get Peter to be brief with his answers ...

PETER: Yes.

JANE-FRANCES: ... so we can get through as many as possible.

AUDIENCE: One of the areas that particularly interest me is the concept of accurate measurement and in my experience with a lot of the systems that are being introduced by the government, there is no accurate measurement of what is being accomplished. And so things like the Victorian Energy Efficiency Scheme talk about saving so many tonnes of carbon and when you ask them how do you measure this, they cannot do so. So for example in a household, if you were to measure the amount of electricity on the meters, that gives you an accurate measurement of what the energy usage is in that household.

PETER: Yes.

AUDIENCE: And for example, where you go into something like ceiling insulation there are studies which show that people just tend to raise the temperature in the house and in fact you don't save any energy.

PETER: Yeah.

AUDIENCE: Comment.

PETER: There are lot of things that I could quickly comment on.

JANE-FRANCES: Yeah, let me do you quickly and ...

PETER: But I'm not ... whom.

JANE-FRANCES: So right behind you.

PETER: You're testing my memory now.

AUDIENCE: Hello Peter. Nathan Alexander from Alexander Urbanism.

PETER: From where, sorry?

AUDIENCE: Peter, the ...

JANE-FRANCES: He has his own consulting firm.

PETER: Oh, okay.

AUDIENCE: ... State Government ... the State Government intends to expand Melbourne to the growth areas. Is this in your opinion going to make Melbourne more sustainable or less?

JANE-FRANCES: Great. We'll answer those two. Liz, down here at the front is next and the up at the back where you were going. So the gentleman in the suit at the front. So there you go.

PETER: Well, on the latter one first. Peter Newman and I have both quite independently done studies over a long period of time in terms of the shape and densities and their benefits or disbenefits. All of the ... all the studies that I've done indicate that there are very significant and demonstrable environmental benefits for having more compact cities. I'm not saying high rise, because one of the interesting insights that we got from our study that ... you saw the six images, Docklands, and we had a very good representation from there, is that they had the highest of all per capita consumption of any, when you control for whatever. So there is a category of occupant there, and part of it is income, but their responses to other questions that really probed what their understanding was of what was in their apartments in terms of energy saving appliances or where their energy was sourced from, etc, etc, showed a very high level of ignorance compared to those that occupy detached and medium density housing. And so we kind of said there's a bit of a hotel effect operating there as if, you know ... and we all may be guilty of this more or less if you go to a hotel you don't really understand all of those things and so your behaviour ...

JANE-FRANCES: I particularly don't understand how to make the alarm clocks work.

PETER: Well that's true. So yeah, one of the reasons that we ... that myself and my other two colleagues have been motivated into the greyfields area is because that's where we believe that you have to have some success, otherwise you'll have governments, because of the pressure that builds up within there to get a solution for housing to continue to redraw boundaries and say well we really don't need that piece of farming area. Whereas in fact we will need that piece of farming area in the future to provide food and green space and just for our ambient air quality. In relation to the question that you have, the report that we did for the Federal and State Government last year, this was commissioned before they ... before the Rudd government decided on an energy trading system. So you know, all options were kind of on the table. Would

you have a trading scheme that may take you into a territory where you're relying on certain organisations offering the ability to carbon account. And many, a number of us speculate that has the basis for an interesting bubble economy to develop because who really understands those kind of measurement and trading systems. They're very sophisticated systems. But it is possible to understand in reasonable detail what different types of dwelling consume on average in terms of energy, what your appliances consume, if you have best of breed appliance versus just an ordinary performance, what the difference in energy savings and CO₂ savings that can make. If you are prepared to invest in a five star energy house in terms a, you know, compared to a clunker, you know how much more energy that's going to save. And that translates very rapidly now into dollars, if you have a look at the front of paper. (Inaudible audience comment) Well theoretically, but in terms of metering is ... which is one of the other things that you mentioned, there's a real important thing missing with the metering, and that's a device that's connected to the meter and some of the key appliances that are energy consuming with your domestic environment that will inform you ... what ...

JANE-FRANCES: They give you instant feedback.

PETER: ... what has been ... you get that feedback. And you can kind of have a chart or make up your own chart in terms of, you know, what you should be looking to have happen in that context.

JANE-FRANCES: I'm going to be ... I'm going to intervene here and be ruthless because he's shaking his head, but you can take it up later. That's fine. And I'm going to pick up the next two questions which is here in the front and yeah, the gentleman right up the back, thanks.

AUDIENCE: Tim Van Gelder from AusThink. I wonder if you can comment on the final phrase, I think it was, of your presentation there where you hinted darkly that if we fail to take these pathways, there will be something like a total system breakdown. What would that look like for Melbourne, and can you particularly comment on the opinions of that on what we do versus what everybody else, the rest of the world does.

JANE-FRANCES: So we'll take the question from the gentleman up the back and then ... and please do put your hand up if you'd still like to ask a question now because we're ...

AUDIENCE: My name is Muiywar from Melbourne Uni. My concern is about the attitude of people towards development of the greyfield. As it will stand now and everything seems to suggest that greyfield development is possibly more optimal, more so than the greenfield development. But there seems to be a lot of inconsistencies in government approach especially between the state and the local governments in terms of government approval and strategy planning. How do you think all these things could be resolved, please?

PETER: Yeah. Last one first. We're right in the middle of an engagement that the state government is undertaking to try and understand what the capacity of housing in the middle suburbs in the greyfields is. And that's quite different from the independent work that we're doing for the Australian Housing and Urban Research Institute where we're trying to understand a process that could focus on a particular precinct and engage with the residents of those areas in quite a new and hopefully exciting fashion for them to see an opportunity for participating in a regeneration of the area in which they live, because most people would prefer to remain in their localities. For a very large proportion of households in Melbourne, they're very much under-occupied and that under-occupancy in housing continues probably from the mid-50s of people through to around about 80 where ill health finally forces them out of that house, probably into a hostel or a nursing home or something like that. I guess the question that we have to try and understand is the cohort that are in that 55 to 65 cohort now, what are their aspirations? They're the baby boomers. Are they likely to be different than previous groups? Would they be prepared to engage if there were brokers that actually engaged with a group of 15, 20 households in an area to just explore what their intentions are. Are there financing models that you could identify that may be different from the traditional models that allow residents to get some kind of equity into a regenerated precinct which would be at higher density, but they may ... that may be reflective of what that cohort is looking for in their final, you know, 10, 15, 20 years of life. Less space to have to look after, a new community because, you know, part of the challenge would

be not just not net new housing, but how you can have a better environmental performance through water, energy, better social interactions among those that might come together to say well yes, let's collaborate in some fashion to design where we will live for the next 10, 15 years as a community. So all of these things are quite different and hard to explore.

JANE-FRANCES: I need to move you on to total system breakdown.

PETER: Collapse.

JANE-FRANCES: Yeah.

PETER: I suspect that being a lucky country in the sense of all of the resources that we have at our disposal, will probably insulate us from, you know, a lot of shocks that will occur elsewhere. The GFC is an example of a certain resilience that this nation has been able to assemble, to fight that kind of shock. If you go into the WWF reports that basically, on an annual basis put out the ecological footprints of nations, the ecological footprint relates to consumption. On the other side of their equation is biocapacity. In other words what are the resources of a nation or a region to support that level of consumption. And they clearly document where many countries, very high proportion of countries are in what they call overshoot, in other words they're consuming more than their biocapacity, you know, at their immediate disposal will allow them to and they essentially continue to consume by being able to attract and consume resources that are brought from greater distances. And that always provides vulnerability. Australia fortunately doesn't have that vulnerability, but the question is, if we are now part of the globe and there's virtually no interactions that occur globally that ... or interactions that are global, but where all of the barriers that we might have known 20 or 30 years ago have broken down. You've got global capital movements, you know, that shift around like that. Information movements, movements of goods, services, knowledge that's in heads of people that are flying around can virtually enter and leave any country at will.

The one area where there is some friction is in the area of population flows. And even when you have a miniscule kind of penetration of borders in some countries, that kind of throws ... you know, the bells start sounding off for some people, but that's not at a scale that really would inhibit or cause that kind of downward spiral in Australia. Whereas major exodus of population from some exogenous shock which was in that diagram could well lead to collapse. And it does lead to collapse in countries and cities that don't have the kind of resilience and quality that ours do. You can see that in some of the third world and developing countries.

JANE-FRANCES: The clock is against us. There's always a horrible trade-off at this point because we want to kind of continue the conversation yet we also know that people need to go as well. Have got one more question and I'll ask you to be brief in the asking and for you to be brief in the responding.

PETER: Sure.

JANE-FRANCES: And then I'm going to hand over to Mike Kendall from JBWere who's our host this evening to give a vote of thanks.

AUDIENCE: Thank you, Jane. Peter, Tony Nicola here. I also lecture at Swinburne Graduate School in the business side and I was fortunate to be one of the program managers to roll out the National Emergency Warning System recently. My question is, lovely stuff, and I love the idea of transitions and transformations; do you have confidence in our governments, both federal and state, and our senior management, to be able to carry out such a large and fundamental transformation? And I can give three examples that ... to most recently...

JANE-FRANCES: If you're going to do that, really briefly.

AUDIENCE: Myki system, housing insulation and the building education revolution. Thank you.

PETER: I think that's answered ... that's answered my question.

JANE-FRANCES: Excellent. In that case we'll hand straight over to Mike for a vote of thanks and we'll finish on time, thank you.

MIKE KENDALL: Good evening everyone. My name's Mike Kendall. I'm the State Manager of JBWere here in Victoria. I want to thank Professor Newton and Jane-Frances and the team from Grattan that are here tonight. JBWere's had a very long association supporting the work of the Institute and these lecture programs are an important part of that.

JANE-FRANCES: They look after our endowment so they're very important to us.

MIKE KENDALL: So it's a great two way relationship, but Grattan are very important in how they help us engage with discussion and debate. It's how we get better decisions. I know from an equity market perspective issues such as environment and sustainability which might not be fashionable with the equity market in the press these days, you wouldn't necessarily get the two together, but they're becoming increasingly important not only at a social level but also at a corporate levels. So from the finance perspective these things are also important for us to get more knowledge, which is one of the reasons why we help support these type of programs. So please thank our speaker and Jane tonight, and Professor Newton and also thank you to you all for coming along to support these programs.

(Applause)

AUDIO: This has been a podcast from Grattan Institute. Want to hear more? Check out our website, www.grattan.edu.au.

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