

## **Title: The beach precinct: Professional perspectives of their role and function**

As Carr et al (1992, pp. 92) observe ‘places that do not meet people’s needs or serve any important functions for people will be underused and unsuccessful’. This observation conversely implies that places can be judged by the intensity and diversity of observed activities, provision of facilities, access to amenities and the extent to which these traits met people’s needs can be used as a measure of the ‘success’ of the place. With a view to informing this observation by empirical enquiry, this paper reports on a Delphi inquiry of the opinions of professionals involved in the property field.

The inquiry respondents were asked their opinions, views and understanding of the preferable urban design attributes, characteristics and values of urban beach precincts and their governance, design and development. The beach precinct was recognised by all Delphi group members as a special case of development from other urban locations that needed different rules for governing development and planning processes. There were many comments that criticised previous development models, in particular the location of the line of building permission along the foreshore.

The dominant concerns for most respondents were the spatial relationships of access to the beach, access pathways, recreational and principal built forms. The group was also concerned with the arrangement of the amenities and facilities in the beach precinct and the design of the transit corridors and pathways through the built and recreational forms to the beach. These preferences for particular spatial relationships would appear to be the defining design values in beach precinct solutions for design and planning professionals and have implications for land use management and design.

**Keywords:** Beach precincts, governance, public access to beaches, social, recreational and restorational values, urban design and planning.

### **Introduction**

This paper has emerged from a doctoral research project into the urban design of beach precincts. The case study of three beach precincts on the Gold Coast involved a pastiche of research methods including a typological and urban design analysis, field observations, public questionnaire and a critical content analysis of formal and informal literature using Nvivo 9™. The research culminated with a Delphi group inquiry of a group which was recruited to represent the opinions of academic, government, institutions and organisations,

private consultants, advocacy and institutional perspectives with a demonstrated degree of interest in beach precincts.

The Delphi group included ten people who held academic posts from lecturer to professor, several of whom were also consultants, writers and practitioners in their field of expertise. Five members were employed as independent or corporate consultants. A further five members were employed by local or state government as official or community representatives. Two members were employed in private enterprise as business or development practitioners and a member each from beach activities and environmental organisations. Many, if not all, of the participants had previously held roles in other related contexts of the design, planning, development and governance of urban places.

## **Research Method**

The Delphi method of inquiry allows complex issues to be considered by a group of individuals who are often recruited by their status, reputation, training and professions as experts in a particular field (Linstone and Turoff 2002). The method relies on structured questions, anonymous expert contribution, iteration and anonymous review of that contribution. The intent of the anonymity is to encourage experts to give an account of their responses and opinions on a topic or question on merit alone and without attribution, thereby revealing their reasoning, understandings and beliefs more than they would voluntarily so do with attribution.

The Policy Delphi method of inquiry adopted for this research is designed to obtain reliable consensus opinions of groups of experts where statistical models are not practical or possible because of the degree of complexity of the issue (Rowe and Wright 1999). The Policy Delphi also aims to build an understanding of the range of opinions on any topic from as wide a range of participants as possible. Turoff (1970) explained the adoption of the Policy Delphi in organisations was intended to counteract the weaknesses inherent in the committee approach to policy making (Rowe and Wright 1999).

The Delphi inquiry was conducted with asynchronous communication by email which allows for the recruitment of a dispersed geographic group and for the different work schedules of the participants. The iterative process of conducting the inquiry in rounds also allows the participants to change their opinions and judgements after consideration of the anonymous review/s without fear of losing face or damage to their professional reputation and relationships. The process of using rounds of consultation and review also allows both the majority and minority opinions to be considered.

The opinions of the Delphi group were sought in response to questions that emerged from the preceding stages of the case study research. These questions were intended to:

1. reveal the group's opinions of the appropriate spatial layout and land use of urban beach precincts;

2. explore the appropriate urban design for egalitarian public access to activity, amenity and facility;
3. discuss the appropriate nature of the governance of the urban design and planning of beach precinct development; and,
4. consider the urban design and planning measures that would increase the resilience of beach precincts to severe weather events and climate change.

### **The appropriate spatial layout and land use of beach precincts**

The Delphi group responses for the preferred spatial layout and land use of beach precincts were focused on the appropriate governance of beach precincts. In particular, they discussed the appropriate levels of authority or influences for decisions and processes which complied with definitions of boundaries and legal limits of the economic, environmental, social and cultural benefits. They were also interested in where the limits of the different spatial zones from the natural environment of the coast to the built environments inland should begin and end. The nature of the ambiguous transitional boundaries found in beach precincts was commented on by the group and is described in Figure 1.

For the Delphi group, the space from the foredune to the beach was considered to be an environmental buffer zone which may need to be created or extended from existing development and should be incorporated into future development. The Delphi group members commented that the spatial arrangement and land use of the beach precinct should reflect current knowledge of the changes inherent in the natural environment and climate to respect the forces of nature. The use of the key transitional space of the foredune to the beach was also seen as a crucially important factor in ensuring public access to the beach.

The Delphi group were also guided in the questions asked of them to adopt the urban beach typology developed by the author to discuss the urban design and planning of beach precincts (Figure 2). This was in order to avoid the conflicting terminology of the different professions causing confusion in understanding the responses of the group. This approach was also taken as it simplified the attribution of the responses to the different elements of the typology for the preferred urban design attributes and characteristics in the subsequent content analysis.

This typological model of Gold Coast beach precincts draws on the definition of the public access to the coastal area, recreation and activity zones and adjacent development attributes of the Ley de Costas (1988), the concept of dominant land uses of adjacent built environment suggested by Hayllar et al (2008) and the transect tool of analysis for human and natural habitats conceived by Duany (2002).

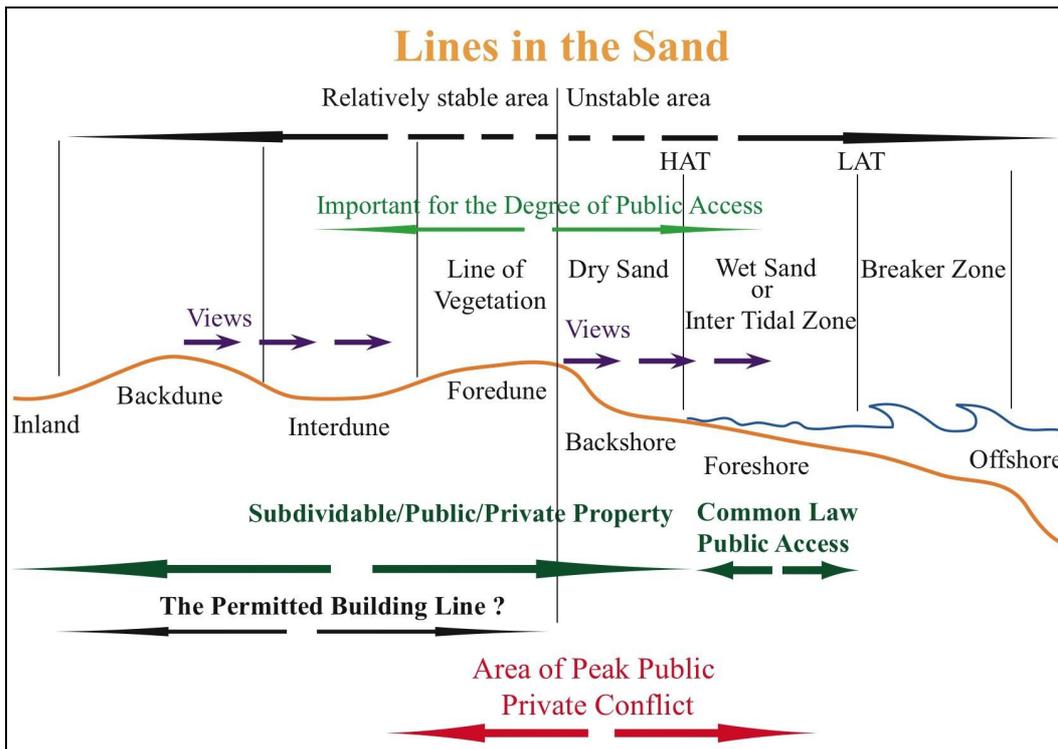


Figure 1: Lines in the Sand: the Ambiguous Transitional Boundaries of Beach Precincts (Cartlidge, 2011)

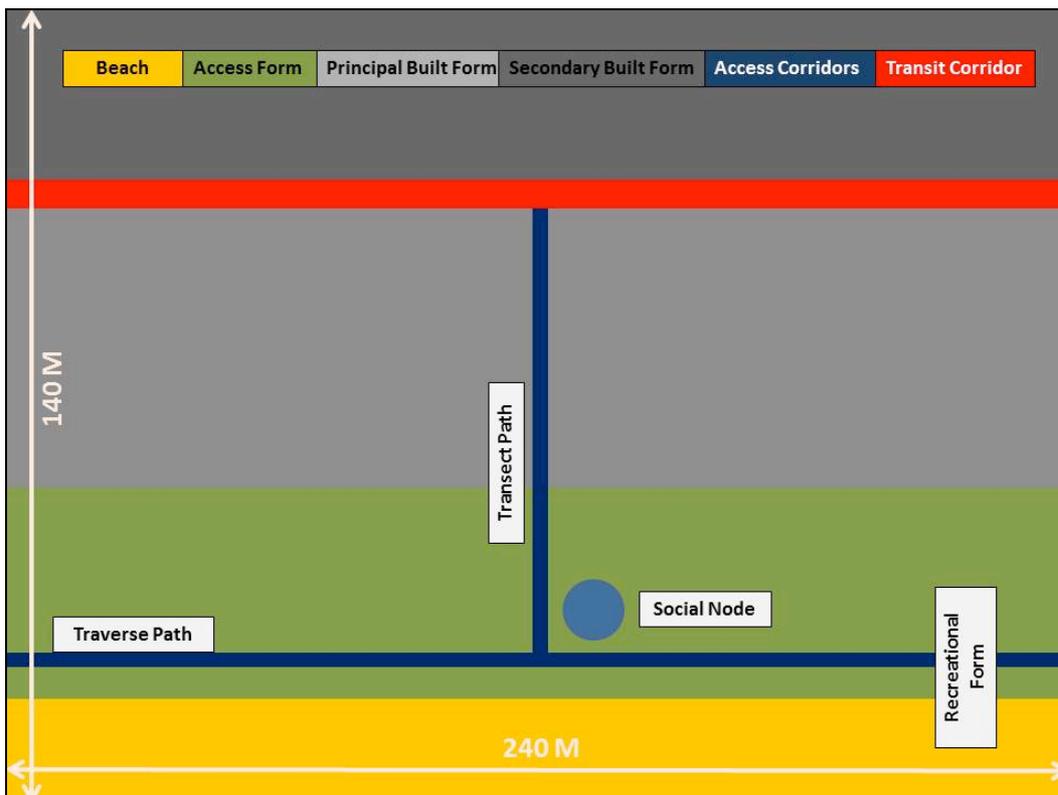


Figure 2: The Typological Model of Gold Coast Urban Beach Precincts (Cartlidge 2011)

The typological attributes of the beach precincts found on the Gold Coast are the access, recreational, principal and secondary built forms which are used to distinguish different types of land use and the social node, the access and transit corridors which indicate the locations of activities (Cartlidge 2011a). The distinguishing characteristics of the different types of beach precinct are found in the actual scale and size of each land use, the proximity of the

arterial road to the foreshore, the existence of a foreshore park in the access form, the relative position of the traverse access corridor parallel to the beach and the nature of the transect access corridor inland.

The recreational or access form was described as the most important attribute of the beach precinct by the Delphi group respondents. They thought that it should dominate the allocation of space in the beach precinct. The other concerns for most respondents were the spatial relationships of access to the beach, access pathways, recreational and adjacent built forms. The group was also concerned with the arrangement of the amenities and facilities in the beach precinct and the design of the transit corridors and pathways through the built and recreational forms to the beach.

Some members thought that the transit corridors should not always be located at a distance and parallel to the beach but come within walkable distance and, where possible, closer to the traverse pathway to touch the access form at significant places for recreational and social activity. A preference was also expressed for the transit corridor to come close to the access form and beach as often as possible to give a sense of arrival at the beach precinct.

Respondents also indicated that the transect pathways should be at frequent intervals through the principal built form to facilitate amenity and connection to the hinterland; transect corridors which were at right angles to the beach were a favoured form. A number of respondents thought that land uses should be fine-grained and diverse in the principal built form with small-scale café/retail nodes on the edge of the principal built form adjoining the recreational access form, accessible to transit. These preferences for particular spatial relationships would appear to be the defining design values in beach precinct solutions for design and planning professionals.

For most respondents, development in the principal built form is dependent on an analysis of the condition and context of the natural environment of the beach. There were differing opinions about the appropriate development options for the principal built form. However, it was generally agreed that development should only be permitted where analysis indicates that it is buffered from the effects of extreme weather events or erosion.

For the Delphi group the attributes and characteristics of appropriate urban design for beach precincts in descending order of implied significance include the typological elements of access form and beach frontage, the principal built form and the spatial orientation of these elements to the beach. Respondents identified a need to clarify the definition of beach access and where the beach begins to include the foreshore in government law, plans, policies and programs.

### **Urban design for public access to activity, amenity and facility**

In discussing the urban design of beach precincts for public access to activity, amenity and facility the Delphi group members expressed a preference for a walkable environment with frequent pedestrian access from the built form, views to the water and safe attractive

pathways. They considered it important that recreational and social amenities and facilities should dominate the design of the foreshore parks. Some of the Delphi group expressed the view that the public access to the beach, although an essential component of the spatial layout and urban design of beach precincts, should utilise environmentally sensitive methods such as elevated boardwalks wherever possible in the transitional access corridor.

The Delphi groups favoured urban design characteristics related to the intrinsic values of each beach precinct. These were seen as the cultural context, natural features and land use. Importance was attached to the nature of the pathways connecting these elements as they determine the degree of opportunities and choices for preferred activities and uses. The preferred design of beach precincts included a diversity of recreational and social amenities and facilities that create social nodes aligned to uses which can create place identities for foreshore parks and beachfronts.

The spatial and commercial concerns of planning appear to dominate the respondent narratives concerning the urban design and planning of beach precincts. Several members gave particular attention to linear foreshore parks and their unimaginative public open space design which does nothing but allow walking or cycling. As one member commented, when referring to places where resorts line the road across from the foreshore parks: ‘Zoning changes could create active frontages to these properties and offer meeting places like cafes, services and street-scaping that would lift the public realm in front of the properties.’

There were no specific references by the Delphi group to the activities of walking, pushing a pram or jogging which were highlighted as both the purpose of visit and observed as dominant activities in other research conducted during the case study. This either reflects a lack of understanding about beach precinct use, a focus on particular professional agendas or it is a reflection of the identity of the participants. This situation tends to support the proposition that although the professions notionally believe that amenities and facilities should be provided for activities for all the demographic groups of society, they may not be able to separate their personal preferences of appropriate use of places from designing and planning them (Meers 2012).

The threats to the sense of invitation to beach precincts were seen as the dominance of economic values in planning and development, crowding and sensory pollution, incremental privatisation of public space and inappropriate commercial edges of the principal built form. In the opinion of the Delphi group, these considerations would need to be incorporated into any urban design and planning guidelines for future beach precinct development in a prescriptive manner, but without limiting their ability to evolve and adapt to changes to local cultural needs and functions.

It was possible to discern a generalised design preference for the public spaces of beach precincts from the focus implied by the coding frequency for facilities and amenities from the content analysis of the Delphi group responses (Table 1). It can be seen that responses were focused on the beachfront, with a preferred form of foreshore park or esplanade for the land adjacent to the beach. The Delphi group envisaged movement pathways from parking and

public transport stops to beach access points. Views to the beach were an important amenity both along the foreshore and from the built form and there was some opposition to obstructing those views to the ocean with dunal plantings and buildings.

*Table 1: Frequency of the Facility and Amenity References in the Delphi Group Responses (Author 2012)*

<b>Frequency of Reference</b>	<b>Amenity References</b> <i>Recorded Incidence of Reference to Topic in Brackets</i>
<b>Very Frequently</b>	Beachfront (92), Commercial (31)
<b>Frequently</b>	Foreshore Park (16), Pathways (15), Views (14), Activity or Event Space (14), Parking (12), Open Spaces (10)
<b>Sometimes</b>	Esplanade (8), Restaurants and Cafes (7), Walking and Cycling Pathways (7), Shade and Shelter (6), Beach Access Points (6), Public Art (5) , Public Transport Stops (5)
<b>Rarely</b>	Concessions (4), Resorts (4), Toilets (3), Boat Ramp (2), Plantings (2), Caravan Parks (2), Life Guard Facilities (2), Children’s Playground (2), Covered Bench Tables (2)
<b>Very rarely</b>	Single reference for: Picnic Areas, Barbeque Facilities, Historical Signage, Licenced Premises, Life Guard Facilities, Landscaping, Shops and Offices, Showers, Swimming Pools, Harbours.

The Delphi group was also concerned with commercial activities to provide economic activity and private supportive infrastructure for visitation and a diversity of uses in the beach precinct. This would be complemented with appropriate public infrastructure and the maintenance of public spaces and facilities such as open spaces which could be used for a variety of purposes—shade and shelter, toilets, lifeguard facilities and showers for the safety and health of the visitors. Finally, the Delphi group gave some consideration to the category of facilities that support specific activities such as public art, children’s playgrounds, picnic and barbeque areas, historical signage and harbours.

The frequency of facility and amenity references by the Delphi group’s members was taken to indicate professional levels of importance accorded to those amenities. The frequency of reference may also be linked to what is most likely to be provided in the experience of the group member. In the second round a member observed that the frequency of mention would probably be accurate in terms of what was talked about by professionals. However, they thought that the public would perceive landscaping, toilets, playgrounds, and seating which were shown in the ‘rarely’ referenced category in the table, as more important than amenities such as concessions, public art, public transport stops and resorts shown in the ‘sometimes’ referenced category.

The relative frequency of the Delphi group coding for facility and amenity can be compared to the order found for the content of articles which concerned public access to beaches (Cartlidge 2011b) and online articles concerned with proposed sections of the Oceanway project which were also subject to content analysis during the case study (Table 2). The only facility topic common to all analyses is the foreshore park. Commercial facilities were a common topic for the Delphi group and the public access articles, and it may be significant that they were not included in the Oceanway articles because the nature of the space and location of the project does not envisage a foreshore park.

Table 2: Relative Frequency of Topic Coding to Facility and Amenity (Author 2013)

	Delphi Group Responses	Oceanway Articles	Public Access Articles
<b>Amenity and Facility</b>	<b>Amenities</b> <b>Beachfront</b> <b>Views</b> <b>Shade and Shelter</b> <b>Public Space</b>	<b>Amenities</b> <b>Privacy</b> <b>Views</b>	<b>Amenities</b> <b>Views</b> <b>Public Space</b> <b>Beachfront</b>
	<b>Facilities</b> <b>Commercial</b> <b>Foreshore Park</b> <b>Pathways</b> <b>Event Space</b> <b>Parking</b> <b>Esplanade</b> <b>Restaurants and Cafes</b> <b>Walk and Cycle Ways</b> <b>Beach Access Points</b> <b>Public Art</b> <b>Public Transport Stops</b> <b>Resorts</b> <b>Concessions</b> <b>Toilets</b> <b>Boat Ramp</b> <b>Life Guard Facilities</b> <b>Plantings</b> <b>Caravan Parks</b> <b>Children's Playground</b> <b>Covered Bench Tables</b> <b>Swimming Pools</b> <b>Historical Signage</b> <b>Licensed Premises</b> <b>Shops and Offices</b> <b>Barbeque</b> <b>Showers</b> <b>Picnic Areas</b> <b>Harbours</b>	<b>Facilities</b> <b>Oceanway</b> <b>Footpath</b> <b>Streets and Roads</b> <b>Public Infrastructure</b> <b>Cycleway</b> <b>Foreshore Park</b> <b>Beach Defences</b> <b>Surf Lifesaving Club</b> <b>Art Installation</b> <b>Playground</b>	<b>Facilities</b> <b>Beach Access</b> <b>Parking</b> <b>Commercial</b> <b>Foreshore Park</b> <b>State or National Parks</b>
Topics in each theme are listed in descending order of coding incidence			

The facilities in the Delphi group responses indicate a group that creates reasons for visiting the precinct, facilitating visitation and supporting extended stays. This group includes event space, restaurants and cafes, children’s playgrounds, swimming pools, beach access points, parks, amusement parks, public art, barbeques, picnic areas, licensed premises, shops and offices, boat ramps, harbours and the surf life saving clubs.

The Oceanway articles largely focus on the Oceanway itself as a facility that creates its own reasons for use and visitation. There are also frequent references to a footpath and cycleway as alternative narratives of possibly exclusive, preferred use of the beachfront. The public

access articles are more narrowly focused on the nature of the beach access points themselves and adjacent commercial development, foreshore parks and the state or national parks that some beaches are accessed through.

The facilities which support visitation include parking which is a topic common to the Delphi and public access themes. The desire for supportive infrastructure for the safe and comfortable use of the Oceanway was indicated by references to streets and roads, showers, lighting, closed circuit television cameras, policing and security. The Delphi group also included these facilities as important in supporting visitation and use but also added facilities they expected of a foreshore park. These included seating, information and historical signage, trees and plantings, concessions, covered bench tables with references to resorts and caravan parks which also support tourist and extended visitation.

The Delphi group responses were also very different from the respondents to the public inquiry questionnaire conducted in the case study. Their responses to the questionnaire were focused on the purposes of visitation and the preference for facilities and amenities which supported their activity preferences. For example, although social and recreational walking was sometimes referenced by the professions, it was clearly a primary purpose of visit for the public from field observations of the study and a preferred activity in response to a questionnaire survey (Raybould and Lazarow 2009).

There was a degree of dispute amongst the Delphi group members as to the nature of the local Australian spiritual, symbolic and cultural needs. There was some agreement that one of the values that were associated with Australian cultural values is the egalitarian nature of beach and some members wanted the local context and character to be incorporated as an imperative to guide the design of public access to beaches.

The only consistent opinion expressed by the Delphi group for cultural values was the universality of the public attraction and right to access beaches and beachfronts. This public attraction was considered to be founded upon the aesthetic connection to natural features in the natural environment, the flora and fauna, the sociability of activities, a walkable human scale and an authentic sense of place connected to the local culture, environment and history.

### **Governance of urban design and planning of beach precinct development**

For the Delphi group the location and nature of development in beach precincts was a pivotal decision in the governance and urban design of beach precincts. As one commentator observed, 'beach access is dependent on the separation of private property from the foreshore'. There was often a high degree of co-reference in the comments made by the group concerning the governance of public access, development, urban design and planning.

There were clear statements from the Delphi group regarding the primacy of public interest in the ownership of the foredune and for the government to be responsible for the stewardship of the foreshore to facilitate public access to the beach. Respondents were unanimous that no future development of any new privately owned beachfront should be permitted and current development needs to be curtailed and eventually returned to public ownership. Public access to and ownership of the foredune was seen as having a higher value as a public recreational space rather than a suitable place for development. This transitional space was also seen as having high environmental buffer values between the ocean and inland development.

The Delphi group indicated that permissive planning processes in Queensland were not in the interests of the community as a whole. The group considered that development in beach precincts requires prescriptive controls over development including the nature of the street frontages, building heights and suitable land uses. The prescriptive nature of planning controls could be ameliorated by merit-based elements to achieve sustainable development criteria. The Delphi group, as a whole, supported the idea that there needs to be a fundamental shift away from the application of urban design and planning practices developed for inland cities, towards a new paradigm that re-orientates the planning and governance of beach precincts for the benefit of the all as a public trust doctrine.

There was very little support for continuing past development practices on beachfronts and a strong expression of regret for the development that already exists. The suggestion for a commonwealth regulated and controlled, coastal commission for a national park along the entire length of the nation's coast was considered by the group to be the best way to tackle the ongoing challenges faced by coastal cities, towns and settlements in Australia (Beatley 2009, Elrick, Dalton and Kay 2011, Kirkpatrick 2012)

The controlling authority would act within the public trust doctrine and prioritise public access, development permissions and management of rural and urban coastal areas (Haas and Olsson 2014). In the rural areas of the national park there would be different priorities than in urban ones. In rural areas the needs of the natural environment were seen as the highest values in any development process. In contrast, the urban areas' priorities would seek to meet public access needs and social and cultural values in current and future development. However, in urban areas it would still aim to minimise the effects of development on the environment and reduce the liability of the nation for severe weather events, expected sea level rise and associated erosion and flooding of public and private infrastructure and buildings located in inappropriate development locations (Committee on Coastal Erosion Zone Management 1990).

In order to achieve these aims it was thought that the commonwealth government would need to resume control, and ultimately ownership, of all properties within the designated national park to the degree of priority established by a risk and cost benefit analysis of returning coastal properties to public ownership. The creation, management and resumption of property would need to be a commonwealth responsibility similar to its current authority over development at and around airports and for similar reasons. The dominant local and global

political groups have proven adept at circumventing and undermining attempts to legislate for the public trust at local government and state levels (Cartlidge 2011b). These groups will obviously attempt to subvert legislation as they did in Spain (Ariza 2011) and elsewhere (Beatley, Bowering and Schwab 2002).

However, the creation of a coastal commission would make it much easier for social, community and environmental groups to organise in the defence of the coast as a single public access and equity issue. It would also create a narrative that past planning failures, although difficult to address, could be tackled using a whole-of-government response with public support and allow the application of value-based, urban design and planning suited to beach precincts.

One respondent thought the government should also recognise that a growing regional population necessitated that the needs of the general population come before those who live on the beachfront. The reason given was that ownership can change, but that the desire for visitation does not. Yet another respondent suggested that local government had a role to inform and educate the public about past development processes and their implications. It was proposed that modern technologies should be utilised to disseminate information on planning processes proactively and to a wider audience.

It was also suggested that development in subtropical climates should adopt the principles for subtropical design. Support was also given to activate or develop retail land use on under-used, private recreational areas such as car parks, pools and tennis courts which front onto esplanades or beachfronts and are common in the apartment/resorts along the roads opposite the foreshore parks commonly found in Gold Coast beach precincts.

### **Governance for resilience to climate change and extreme weather events**

The beach precinct was recognised by all Delphi group members as a special case of development that needed different rules for governing development and planning processes when referred to other urban locations. There were many comments that criticised previous development models - in particular the location of the line of building permission along the foreshore. The foredune was singled out as unsuitable for private property development on environmental, climate change and erosion, public access, amenity and economic liability grounds.

A number of propositions for governance put forward by Delphi group members were intended to prevent the current public liability for private property damage due to extreme weather or climate change events worsening and to eliminate future development which would compound future and current public liability. Beachfront development was seen by most respondents as a very complicated, expensive and an almost intractable governance problem in which 'all levels of government must involve the community to generate support in designing its solutions'.

There were only infrequent references to climate change but there were more to the effects of erosion and the need to protect existing coastal development from damage by extreme events. The main narrative was concerned with who should pay for protecting coastal property and whether or not there was an obligation for those protected by public money to allow public access.

The Delphi group was careful to define the environmental context of coastal processes, natural features, nature of the beach and topography in any response to local and regional solutions to erosion and inundation caused by climate change or extreme weather events. They were unanimously in favour of adapting planning and development regulation and control to allow a planned retreat and reduction of development from the ocean to create buffer zones that would both conserve natural ecologies and protect development.

In response to the existential challenge to the beachfront from extreme weather events and climate change, the Delphi group were clear that any beach precinct development should be designed and planned in a precautionary manner. The group strongly preferred a conservative line of building permissions. The critical transitional foreshore from built to natural environment could also be controlled by a commonwealth agency to prevent local politics creating future liabilities for the broader body politic. The group was also clear that development should only start inland from the foredune where it is analysed as safe to do so. The Delphi group members were also opposed to all but essential beach engineering.

The legacy of previously permitted development was recognised in creating ongoing public liability for the defence of a building line established before sea level rise and climate change processes of inundation and erosion were widely recognised by governments. Many of the Delphi group thought that the building line may need to be moved due to these natural processes and respondents commented on the difficulties this would create. A suggestion was made that, in future coastal subdivisions, beach precinct property could be leased out by the government rather than be sold freehold. This would give government the option of either buying back the lease or allowing it to expire.

The effect of incremental, low-level, development, where the small, low impact, beach shack can quickly progress to a multi-million dollar private home, apartment block or billion-dollar resort development (Ironside 2012, Cooper and Lemckert 2012), was seen by many of the Delphi group as responsible for current problems in adapting coastal settlements to future climate and extreme weather events. There was also a recognised need to examine current injurious affectation compensation laws to facilitate future changes to the management of coastal development (Giskes 2004).

The responses of the Delphi group members identified possible criteria for development controls and processes that reflected the criticisms of past developments and sought to avoid creating future problems. Developers were said to be able to adapt and maximise their returns as long as they have a degree of rational certainty. Alignment of development to the public recreational space of the foreshore allows the developer to maximise the number and quality of open views to the water from the beach precinct.

One respondent observed that developers need certainty and opportunity for investment in beach precincts as part of their decision-making process. This was illustrated by a respondent's explanation of the dilemma that developers face with different sizes and locations of development land relative to the beachfront. The respondent considered that in most cases the developer and local government interests generally coincided.

In response to the inquiry into the financial ability and competence of local authorities to effectively regulate the design, planning and development of beach precincts the preferred option of the Delphi group was for commonwealth oversight, responsibility and control. However, a couple of group members observed that there is a constitutional separation of powers in Australia for land development between commonwealth and state governments and this would need to be addressed in any change of governance over beach precinct development. One solution proposed was for a body constituted to represent state interests acting in partnership. Some respondents saw all levels of government as bearing responsibility for the liabilities generated by the current situation of beachfront development and the associated risks.

A commonwealth coordinated program was the preferred option to regulate coastal zone resilience to climate change since shorelines cross jurisdictional boundaries and engineering solutions in one state can affect the neighbouring state. For example, a Delphi group member observed that the Tweed River training walls of the neighbouring state of New South Wales have, and continue to have, consequences for the Gold Coast (Griffith University Centre for Coastal Management 2012). It was also proposed by respondents that the commonwealth government could establish national standards on planning controls, mitigation and adaptation of foreshores around the country.

A Delphi group member was of the opinion that governments at commonwealth, state and local levels would be expected to facilitate community understanding of the planning controls, mitigation and adaptation policies adopted to improve local responses to climate change and extreme weather events. Another commented that a high degree of transparency and stability of these policies would be necessary to provide consistency for developers and the communities affected by them.

This was seen as particularly relevant on the Gold Coast where the state border can complicate planning and development. Developers were said to want to maximise the attractiveness of their development to improve return on investment. However, the shape and size of the land plot in the beach precinct is very important in determining the approach taken by the developer. If the developer has a narrow strip of land parallel to the beach they are under pressure to intensively develop the beachfront as the principal built form and keep the access to the beach as private as permissible. If they hold a larger deeper plot adjacent to the beach then they can maximise their returns differently: a public beach frontage allows the rear of the development to claim value from its proximity to the amenities of the foreshore parklands by attractive connections to the recreational form.

The comments made by respondents in the Delphi group process confirm the transitional corridor between the natural environment and the built environment as vitally important in both the governance and design of beach precincts. The transitional corridor along the beachfront is seen as a buffer zone with contending public access, recreational and natural values. Group members thought that a transitional space needs to be established from the wet beach to the first place that the built environment can reasonably be expected to be safe from natural processes in the foreseeable future. This transitional corridor is particularly important in considering the resilience of current and future urban beach precincts to extreme weather and climate change events with changes to ocean currents and sea level rises expected in the coming years (Queensland Government 2008).

If the transitional corridor of Gold Coast beachfronts were to be reassessed for changes to planning permission it was expected that application for compensation would follow from the thousands of Gold Coast beachfront property owners, who have already shown a propensity for litigation (Willoughby 2012, Fineran and Willoughby 2012). This was indicated by the Delphi group members as probably affecting much of the decision-making processes of planners and councillors on the Gold Coast. It also restricts the range of rational responses to the conflicts and challenges facing those decision makers in matters such as climate change adaptation at local, state and commonwealth levels of government.

## **Discussion**

For those people who make decisions about the urban design and planning of beach precincts the value of the Delphi method of inquiry stems from the identification of the range of topics and themes in complex issues from expert opinions to enable consideration of those issues and possible scenarios for policy making (Rowe and Wright 1999).

The responses of the Delphi group were largely concerned with governance, urban design and planning, environments, activities and amenities, in that order. They also tended, in the language used and the focus of comments, to reflect the professional training and experience of the respondents. However their values were sometimes in conflict with the observed and reported preferences of the public phase of the case study. Regulation and control of public access in an environmental context were a significantly common theme for professionals, whereas for the public, appropriate activities and amenities such as enjoying the views, walking and relaxing, toilets and parking were identified as critically important motivation for visitation to beach precincts.

The arena of conflict identified by the Delphi group was in regard to the governance of the urban design and planning of beach precincts. In particular, it is about contested interpretations, spatial layout and land use of the beach precincts. It is through appropriate governance that the degree of public access to beaches from the built environment is defined by the limits or boundaries of public and private property.

The Delphi group identified that the rights to public and private property and, in turn, where people may go, are often in a state of legal contest, particularly in the topographically unstable transition from built to natural environments. The transitional corridor along the beachfront was constantly referred to as the source of the benefits of the beach precinct for activity and amenity as well as the location of the conflict between public and private use.

### **Further Research**

Within the text of this paper there are many topics and themes that would reward further research. These include the differences in the focus of the responses between the different built environment professionals and different demographic and special interest groups on the importance and allocation of public space and infrastructure for activity, amenity and facility in beach precincts.

The relationship between their education, experience and professional practices and their opinions would also be of interest in understanding the decision-making roles of the different professions as discussed by McGlynn (1993). This may assist professionals understand how their decision making affects opportunities for the use of the beach precincts by different demographic and interest groups.

Other topics for ongoing investigation include preferred spatial layouts, land use and urban design for public access to activities and amenities. This would be focussed on how public space could be allocated and public and private infrastructure provided for by the professionals who design, plan and manage beach precincts. With the intent to coincide with the needs, desires and values of the different constituencies who compete for their use without excluding the disadvantaged groups identified in the case study.

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