

BEVERLEY PARK GOLF CLUB

MASTER PLAN REPORT

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GOLF by DESIGN

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1 EXECUTIVE SUMMARY

We have developed a new Master Plan for the Beverley Park Golf Club that we believe will be an enjoyable challenge for golfers of all abilities.

The new golf course measures 5684 metres from the championship tees and has a par of 70. The ladies championship course totals 5347 metres and plays to a par of 72. Whilst not entirely balanced, both nines should present as solid tests of golf and if the need arises a two tee start should be allowable.

Overall the golf course will be a more strategic challenge than it was previously providing the golfer with opportunities to choose challenging shots for greater reward mixed with alternative paths for those with more conservative abilities. Emphasis will be on engaging the golfers mind not strength when playing the course. Notably, and not insignificantly the structural changes planned will mean that the course will be a much safer facility, in particular for adjoining neighbours but also for golfers.

The new Master Plan has been conceived to ensure benefit from the anticipated stormwater overflow system located within the golf course. We believe this work will be the first in a period of upgrading and this Master Plan has been conceived to help accommodate the overflow system but also utilise it to the Club's benefit.

The proposed reconstruction of all greens and bunkers over time will ensure a consistent look and quality result is achieved from the first tee to the eighteenth green, at the same time as improving the overall strategy of the golf course. These changes can now be made in an ordered, costed and structured manner that the Master Plan dictates, with a long term vision.

It is possible to review staging of the redevelopment at any time during the implementation of the plans and timing will be dictated by available cash flow, government grants or both. The redevelopment of the course will be achieved without harming the established ambience of the existing course and indeed build on it through adoption of achievable environmental initiatives and practices.

Reconstruction costs have been sensibly apportioned totaling \$2,045,000. This figure includes an estimated \$800,000 of works proposed for water storage and assumes no financial assistance from government agencies for any works other than the stormwater channel/creek arrangement. The sums quoted are based on typical current construction rates.

2 INTRODUCTION

The following report summarises the design strategy underlying the Master Plan developed for the Beverley Park Golf Club. The Master Plan has been developed to:

- Create safer playing conditions;
- Reduce the likelihood of golf balls leaving the golf course;
- Integrate the proposed stormwater overflow channel into the golf course as effectively as possible;
- Look at the potential for some form of water storage;
- Ensure adherence to the items outlined in the Beverley Park Plan of Management as prepared by Kogarah Council;
- Ensure new works improve the playability of the golf course during or directly after periods of rain;
- Finesse the architectural quality of the course.
- Improve drainage conditions
- Improve the playing surfaces of the course

The Master Plan has been developed following an assessment of the:

- Beverley Park Golf Club's needs, expectations and requirements via consultation with all members of the Master Plan Committee;
- Site's topography, landscape and drainage;
- Various safety risks both within and adjacent to the golf course;

- Course's existing: layout; design strategy; standard of grooming; playing surfaces; construction techniques and maintenance practices.
- Potential constraints on redesign including Members needs, lack of spare land, budget, statutory, boundary and existing infrastructure.

In our analysis of the existing course we have commented upon the following factors:

- Current playing strategies
- Greens
- Fairways
- Bunkers
- Tees
- Irrigation
- Landscaping
- Safety
- General Grooming
- Environment

Also detailed in this report is a hole-by-hole account of the new Master Plan together with a summary of construction considerations and a preliminary construction cost estimate. The purpose of this report is to provide the rationale behind the new Master Plan in tandem with the technical direction, logistics and financial requirements in implementing it.

3 ANALYSIS OF EXISTING COURSE

The Beverley Park Golf Course is located on a small flat parcel of reclaimed swamp land with an area of 29.30 hectares. The land is described as landscaped parkland specifically designed for the playing of golf. Generally the site, other than land occupied by the current 13th hole and the occasional green complex, varies in elevation by less than 1 metre and falls minimally in a southerly direction towards Kogarah Bay. Much of the site is on landfill of a dubious nature with Council requiring a detailed geotechnical analysis to be undertaken prior to any extensive earthworks on the site.

As much of the site is essentially on land-fill, differential settlement over the years has resulted in uneven fairway surfaces that have not been corrected on an ongoing basis. These small depressions hold water for long periods after minor rainfall events.

There is little additional land within or adjoining the site occupied by the golf course that can be better utilised for golfing purposes so the desire to see a longer golf course has been largely overshadowed by the need to improve safety.

Over the years the club has planted many trees on the site to assist in delineating fairways and providing a sterner test for golfers. These trees are a cornerstone of the present golf course as they greatly assist in presenting a safer environment for golfers and offer structured definition to the layout.

Being such a small parcel of land for a par 70 golf course means that much of the course does not provide adequate safety distances between golf holes nor does it provide adequate safety setbacks from boundary fences. Despite this, the course fails to realise the full potential of the site in terms of the golfing enjoyment and ambience it offers. This is largely due to the fact that when the course was first developed men and machine had limited capabilities relative to today and the present course has been developed with limited funds on an ad-hoc and piecemeal fashion. In addition, the lack of residential development adjoining the site at the time of construction in all probability affected original layout decisions. As a consequence the course has various structural, drainage and agronomic faults that serve to create both safety and playability weaknesses by today's standards. These weaknesses, which are detailed below, are becoming increasingly apparent as Members exposure to new and/or renovated courses increases.

3.1 CURRENT PLAYING STRATEGY

As Golf Course Architects we generally review the strategy of a golf course and individual holes in terms of how a single figure or scratch marker would generally play the layout. This is important because they are the group of golfers playing the golf course who have the requisite ability to selectively take on the challenges of the golf course as they are set out. This of course is a generalisation as not every low handicap golfer hits the ball the same distance nor do they possess similar strengths in their game, whether it be ball striking, short game finesse or putting.

This logic manifests itself most importantly in hazard placement because positioning of hazards should be such that they test low handicap players rather than the higher handicap players who will find difficulty regardless of where hazards are placed. This is also reflected in how courses are rated. By carefully siting hazards we endeavour to balance the test of golf with the enjoyment of the challenge for all standards. We feel this is an important fundamental in golf course design where in recent times an undue emphasis has been placed on length and difficulty when the vast majority of golfers are not really in need of either. We at Golf *by* Design are cognisant of this fact and try and tailor our golf courses to provide a balance of difficulty (generally in the form of risk and reward design strategy) with playability for all, never losing site of the need for golfers of a lesser ability to enjoy a round rather than feel they are 'just not good enough'.

Given the above we feel the positioning of many of the existing bunkers on the course not only bear testimony to the fact that the course was established when golf was a somewhat different game to what it is today but also that very little thought has been given to their placement certainly vis-à-vis challenging the low handicap golfer. Of the 23 existing course bunkers we feel that no fewer than 10 of those bunkers would have little or no impact on the way a low handicapper would play the course and indeed would be very unlikely to see a low handicapper in one of them. Moreover, some of the remaining bunkers, whilst they may influence play to some extent are inappropriately sized and therefore create maintenance issues without impacting play substantially.

Today however, there is far more focus on encouraging the golfer to think their way around the course through the strategic placement of hazards, usually in the form of bunkers, water bodies and perhaps stands of vegetation. Moreover contemporary course maintenance strategies and machinery produce superior quality playing surfaces, which, in turn, make for more exacting golf.

The ability to prepare faster and truer playing surfaces today provides the opportunity to present the course very differently to how it may have been presented even 15 years ago. For example today's truer, faster green surrounds make for a more enjoyable and fairer round, particularly for those Members inclined to approach the greens with longer irons or woods.

Whilst the current layout does for the most part use the best of the existing contours, it will be important when considering the detail of course modifications to manipulate the course surface to improve water shedding and ball roll that will influence decision making for the better golfers. Such manipulation is more readily achieved now than when the course was originally constructed through the use of earthmoving plant and access to clean structural fill at no additional cost.

3.2 GREENS

Generally the existing greens present as good putting surfaces due in large part to the calibre of maintenance they receive. However, there is a strong likelihood that the older greens in particular will increasingly exhibit signs of deterioration due to their general age as a result of the deterioration of the growing medium itself. For this reason we would anticipate that these greens would be high on the list for probable reconstruction. The cost to keep these greens as good putting surfaces will inevitably increase with greater reliance on de-compaction (which affects the performance of the putting greens) and chemical spraying.

At present approximately \$40,000 per annum is spent on chemicals for the golf course of which approximately 70% is spent on the greens. Incidentally greens make up less than 3% of the total surface area of the golf course.

Two greens that warrant mention are the poorly designed/ constructed 3rd and 5th greens that have too much surface contour for the size of the greens. This renders much of the actual greens area too restrictive for pin placement and therefore wear becomes a major concern for the Greenkeeping staff.

In addition the putting green is small and access for the staff onto the putting surface is difficult making mowing and spraying of the green a challenge. The large lump in the green also makes pin options few in number.

3.3 FAIRWAYS

Without an adequate irrigation system, reliable source of irrigation water supply and playing surfaces that are discontinuous and bumpy at best there is no doubt that the year round presentation of the fairways is the club's greatest achilles heel. During typical summer months the fairways

tend to brown off, thin out and give the progression to winter a variable and inconsistent playing surface that then allows for the invasion of winter weed species, which ultimately disintegrates leaving a sparse and uneven surface of grass leading back into the summer months. This cycle of growth can only be broken by the continued use of irrigation water to all fairways or otherwise consistent and prolonged rainfall.

Discontinuities in the fairways largely manifest themselves as isolated low spots in many locations throughout the golf course thus preventing surface drainage which in turn dramatically influences the long term presentation of the fairway surfaces, particularly after rainfall.

3.4 BUNKERS

Aside from the parched fairways in summer the course's greatest visual and strategic legacy is its bunkering, combined as it is of differing and conflicting styles.

As mentioned above, of the 23 bunkers we believe that as many as 10 of those bunkers have little impact on the way a low marker would play the golf course and as many as 6 more bunkers are too big for their location and intended purpose. This equates to as much as 50% of the bunker area on the golf course being of little or no benefit to the strategy and playability of the layout.

Given that bunkers are second only to greens in terms of cost of maintenance we feel that Beverley Park would get much more value out of reviewing all bunkering in terms of location and size.

After rain events many of the bunkers hold water for long periods suggesting that sub-surface drainage is either blocked or non-existent.

Adopting a consistent bunkering style throughout the Beverley Park course will dramatically enhance its appearance. The relocation of bunkers will be essential in strengthening hole strategy and ensure that the course is relevant to the way the game is played in the 21st century.

3.5 TEES

Over the years there appears to have been a program of upgrade for the tees with some of the newer tees covered more adequately in terms of a grass surface. Some of the older tees not yet renovated are of poor quality with obvious wear issues compounded by uneven surfaces. For the amount of play received many of the tees, particularly on par 3 holes are too small in area and this contributes significantly in terms of poor presentation.

3.6 IRRIGATION

The current irrigation system provides water to greens, tees and fairways with the exception of a portion of the 6th, 14th and 16th fairways.

Due to water restrictions over the last few years most of the fairways have not received any irrigation water with the look and quality of the fairways suffering as a result.

Kogarah Council has constructed an effluent treatment plant beside the current 14th hole with the view to providing Beverley Park with the necessary irrigation water to ensure quality playing surfaces. The cost of this water is not dissimilar to that charged for potable water by Sydney Water.

Based on cost alone it would be beneficial to the club if a third long-term source of irrigation water supply could be secured (provided capital costs are reasonable) however this is difficult in part because of the flat nature of the site and the small depth to the ground water table. Therefore any dam would need to be perched to make it a viable storage option.

3.7 LANDSCAPING

The course is pleasantly treed but would benefit from additional plantings that will assist in screening the course from adjoining properties or otherwise influence play or improve internal safety. These locations have been identified on the Master Plan.

3.8 SAFETY

Consultation with the Master Plan Committee at Beverley Park Golf Club highlighted several safety issues associated with the current layout, specifically out-of-bounds issues associated with holes 10,11,12,13,14,15 and 16. Internal safety issues exist around much of the golf course due to lack of space and are too numerous to list however several locations where golfers gather are more susceptible being struck from errant golf shots including: tee 9 from tee shots on hole 1; green 7 from tee 11; tee 8 from tee 7 and tee 9 from tee 8. These safety concerns were confirmed during our field investigations, and are outlined below:

- **10th Hole** - This hole plays in a southerly direction parallel to the western boundary of the site and adjacent to Ferry Avenue, which lies on the slice side of the hole. The hole itself is located too close to the property boundary with too few trees preventing stray shots from leaving the site.

- **11th Hole** - This hole plays in a southerly direction parallel to the western boundary of the site fronting Ferry Avenue. The proximity of the hole to the boundary, the alignment of the tee and the lack of a suitable vegetative buffer along the first half of the hole creates the safety issue of golf balls leaving the course from the tee.
- **12th Hole** - The tee shot poses problems for golf balls leaving the site and potentially damaging to houses in Harslett Crescent. The problem is exacerbated as the hole dog-legs to the right slightly somewhat favouring a sliced or faded ball.
- **13th Hole** - The current hole plays parallel to Harslett Crescent. The setback from the boundary is insufficient and the problems with balls flying out-of-bounds and potentially damaging houses are exacerbated by the prevailing breezes and the fact that the left hand side of the hole is bounded by the stormwater canal.
- **14th Hole** – The 14th hole is the most problematic of the golf holes found at Beverley Park. The lack of distance from the fairway to the out-of-bounds fence assisted by the lack of vegetation and prevailing nor-easterly breeze conspires to ensure a large number of golf balls breach the golf course boundary. The elevated tee also assists in allowing golfers to carry the trees on the fence line and the new treatment plant has removed some of the pre-existing trees that served to assist in containing golf balls. The busy Ramsgate Road carries a lot of traffic and for this reason this hole is potentially the most dangerous due in part to the number of breaches but also the potential for catastrophic damage if a car is struck awkwardly.
- **15th Hole** – The 15th hole again plays parallel to the property boundary and into the prevailing nor-easter with out-of-bounds on the slice side of the hole. This coupled with the fact the second half of the hole is ‘pinched’ in that houses intrude into the property ensure that these houses receive a fair degree of golf ball strikes. The fact that the tee shot can end in the corner behind the houses but be in play means the approach shot to the green places further emphasis on golf balls potentially leaving the course on this hole.
- **16th Hole** – This is the other major safety issue for the current layout. The combination of a tee shot being played into the prevailing breeze and the proximity to and lack of trees protecting the out-of-bounds fence means that the houses adjacent in Battye Avenue are often struck. Repeated claims to fix broken roof tiles and anticipated legal action from at least one resident of the street means that this situation must be rectified within the context of the changes made in the Master Plan.

3.9 GENERAL GROOMING

Generally the grooming of the golf course is of a reasonable standard, particularly given the maintenance budget.

The area most lacking in quality is the fairways which have suffered considerably during the period of water restrictions. In addition, given the fairways are constructed on fill differential settlement has over the years resulted in a series of small depressions which hold water for considerable periods after rain events. Between the poorly drained, uneven surfaces and lack of water the fairways detract considerably from the presentation of the golf course. The limitations of the irrigation system are apparent on holes 6, 14 and 16 where the irrigation system fails to provide water to the entire fairways on these holes.

The recent lifting of water restrictions has had a very positive impact on the presentation of the golf course and this fact should not be lost when considering the need for and cost of sustainable independent water supplies. Reshaping/ grading works are obviously required to help eliminate the uneven nature of the surface of the fairways.

The greens present quite well and are reasonable putting surfaces, particularly given that some of the greens are of very rudimentary construction. Some of the older greens, such as 8 and 14 are of the order of 30 years old. The fact that they are still reasonable putting surfaces is probably testimony to the ability of the Superintendents over the years charged with their care.

If the Club continues to irrigate fairways the need to use 'Primo' as a growth suppressant and assist in maintaining the Kikuyu as a tight playing surface will be necessary. Cart paths, particularly at their ends where they bleed out onto fairways are unsightly. In future any reworked or new cart paths should favour the tree line rather than the middle of the fairway where worn areas are less sightly from the tee.

3.10 ENVIRONMENT

The current maintenance practices at Beverley Park Golf Club could be friendlier to the environment however they are best practice and necessary to present the golf course playing surfaces in good year round condition. Chemical use is not considered to be excessive and judicious use and care in terms of application from trained staff should ensure problems to do with their use are kept to a minimum.

Kogarah Council have produced a Plan of Management for the Golf Course Parkland and this has various references to the need for a Landscape Master Plan to be undertaken to provide direction in the future development and visual enhancement of the golf course . Its aim would be to improve the environmental management of the golf course and ensure the protection of the environment by initiating appropriate sustainable land management and maintenance practices.

4 MASTER PLAN STRATEGY

4.1 OVERALL DESIGN APPROACH

In developing the Master Plan for Beverley Park Golf Course we have prioritised the need to improve safety for golfers and neighbours. The most problematic holes (being holes 10 through 16) are all improved by either reversal of play so that out-of-bounds is on the 'hook side' or otherwise improve direction from the tee such that risks are minimised.

We believe we have delivered these safety changes but at the same time have also improved many of the holes interest and strategy. Importantly, the integration of the proposed new stormwater channel/creek provides the golf course with the opportunity to enhance many holes both in terms of beauty and golfing strategy.

The lack of vertical relief across the entire golf course means that harvesting and storage of stormwater is a difficult and complex issue, particularly given this lack of elevational change, lack of depth to the groundwater table and the minimal fall to high tide levels. We have attempted to assist in this case by incorporating perched interconnected dams within and adjacent to the new holes 11,12,15,16 and 17. This storage would be built largely above the existing ground level (with approximate water depths of 2 metres) with water fed into these dams from stormwater overflow out of Hastings Road which already enters the site. Incorporation of these dams will also greatly assist with strategy and improve safety for golfers playing these holes. Likewise the dam to the left of hole 15 will assist in discouraging golfers from trying to shorten the hole and taking on the dog-leg.

Together with appropriate long-term planning the implementation of the new layout will provide a more environmentally sound and sustainable site for both flora and fauna assuming the Beverley Park Plan of Management is followed. Adherence to and incorporation of the stormwater channel within the site and strategic placement and design of wetlands on and adjacent to this system should delight contemporary golfers whilst satisfying best environmental practice and classic golf course architectural principles.

Any detail associated with the implementation of the Master Plan should ensure changes conform to those parameters as outlined in the Kogarah Council Plan of Management for Beverley Park. This should result in a more naturally appealing aesthetic result and one more in

harmony with pre-golf landscaping principles. This principle we call a 'least disturbance' approach to the design which we feel has the combined advantages of:

- Ensures that the established ambience of the renovated golf course remains unchanged and therefore withstands the scrutiny of golf user;
- Creates a golf course that is in aesthetic harmony with the natural environs;
- Creates a golf course with timeless values;
- Results in design solutions that are more likely to pass through the Council DA process;
- Facilitates cost efficient construction; and
- Yields a reduced ongoing course maintenance cost.

Our detailed design treatment will rely on the inclusion and strategic use of native landscape combined with subtle hollows and swales in an attempt to ensure a good aesthetic result and just as importantly ensure a result that is affordable for the club to maintain. We propose that we use these introduced features to define the strategic aspects of the course and further dramatise the natural features of the site by providing contrasting shapes, textures and colours.

In terms of golfing strategy, our design emphasis in terms of hazard placement has been on creating a challenge for every player, not just those of exceptional strength. The intended overall effect will be to excite and challenge the full range of Members abilities in a different way every time they play.

4.2 GRASSING STRATEGY

It is not proposed to make any comprehensive change to the grass choice as it exists at Beverley Park. Tees and fairways are predominantly kikuyu and these species are preferred under the current maintenance regime by the Course Superintendent. We would endorse this status quo.

If a regime of upgrade is undertaken on the greens we would recommend a hardy type bentgrass that does not require the level of upkeep that the A and G series of bent-grasses require.

The Dominant variety of Bentgrass would be our preferred choice of bentgrass for new greens on the basis that it exhibits:

- Improved heat, humidity and drought tolerance over other older species;
- Improved disease and pest tolerance over older varieties;
- A denser more upright growth habit that should help prevent future winter grass encroachment;
- A more vigorous rooting system;
- Lower water requirements; and
- Fast establishment.

4.3 ENVIRONMENTAL STRATEGY

Typically, there are a number of environmental factors that impinge on the development and upkeep of golf courses. These include water quality, flora and fauna, water usage and erosion control. Our Master Plan approach to each of these is detailed below.

4.3.1 WATER QUALITY

The incorporation of wetlands to store and treat stormwater entering or running through the site should ensure that Beverley Park adheres to best practice in this regard. Incorporation of gross pollutant traps within or adjoining waterways and streams should further improve water quality before it enters Kogarah Bay.

4.3.2 FLORA AND FAUNA

The Beverley Park Golf Club property, like most golf courses located in an urban environment, is a wildlife sanctuary providing for an abundance of flora and fauna.

Golf Courses provide one of the true safe havens for the successful cohabitation of urban sprawl and native flora and fauna. Kogarah Council (through its Plan of Management) are keen to ensure that whatever redevelopment takes place at Beverley Park Golf Club is done with both Flora and Fauna in mind. In terms of flora, native endemic species should be used in any landscaping works and if done correctly should provide

feeding and habitat for native fauna. Likewise the inclusion of wetlands within the golf course should provide abundant habitat for wading and feeding birdlife, if designed properly.

It would be our objective to plant out over time any areas that do not interfere with golf play such as the area surrounding the current hole 13, the area between the current hole 15 and the boundary and other like areas to minimise maintenance and water use.

4.3.3 WATER USAGE

Grass selection will be important in ensuring that our most precious resource, water, is used as wisely as possible without detrimental effect on the playability of the golf course. Over time, adjustments to the irrigation system should ensure more precise application to further reduce the use of irrigation water to assist turf grass growth.

4.3.4 EROSION CONTROL

During construction and beyond, the issue of erosion control will be important to the environmental management of the Beverley Park Golf Course and waterways the golf course runoff feeds. The use of sediment and erosion control barriers during any periods of construction work will be critical to the successful control of potential pollution issues during upgrading works. Once established the proposed wetlands will also help reduce any sediment load contained in the stormwater runoff.

4.4 SAFETY STRATEGY

In arriving at the final Master Plan, the various safety issues of the current layout, which were identified earlier in this report have been analysed as detailed below. (Note: All holes use current numbering)

- **Tee shots leaving the course from the 10th tee.** This issue is to be resolved with the moving of the tee forward and realigning it closer to the property boundary. This should ensure the direction of the tee shot is of the order of 15 degrees further way from the property boundary. To further improve the out-of-bounds problem we have located a wetland between the hole and the adjacent property boundary. This hole now plays as a par 4 instead of the present par 3 and additional tree plantings should, in time, help direct golfers away from the property boundary.
- **Tee and fairway shots leaving the course on the 11th hole.** This issue will be resolved by moving the tee forward of its present location and tucking it into the tree line. In this way we can increase the angle the hole plays away from the property boundary and better utilise the

vertical height the trees have to prevent golf balls leaving the golf course. Alternatively the hole now dog-legs further to the left and away from the property boundary and as a result should also reduce the incidence of golf balls leaving the course.

- **Tee and fairway shots leaving the course on the 12th hole.** This problem is lessened as this portion of the course now becomes the extension of the new 12th hole which plays in the same direction but further away from the property boundary. In addition to this safety strategy the last portion of the hole, instead of dog-legging right, dog-legs left putting the green much further away from the property boundary.
- **Tee shot on Hole 13.** The new hole plays from the north-west corner of the portion of land west of the drainage canal and plays in a south-westerly direction instead of the current southerly direction. This drastically reduces the potential for golf balls leaving the course and troubling houses fronting Harslett Avenue.
- **Tee shot and approach shot on Hole 14.** The hole now plays in a westerly direction meaning the out-of-bounds fence is on the left hand side of the hole which should drastically reduce the potential for golf balls hitting cars on Ramsgate Road. The new tee should be at or very near to existing ground level and this along with a greater amount of trees in the eastern portion of the rough should further reduce the chances of golf balls leaving the site.
- **Tee shot and second shot on hole 15.** This problem should be greatly reduced by the fact that the new hole plays in an opposite direction meaning the out-of-bounds problem is on the hook side of the hole. The tee shot will be from a lower elevation which should also help reduce the incidence of golf balls leaving the golf course.
- **Tee shot and second shot on hole 16.** This, like the tee shot on hole 14 is one of the worst of the safety problems with an abundance of golf balls peppering the homes on Battye Avenue. Repeated claims for broken tiles are testimony to this fact. One neighbour has threatened legal action if the incidence of golf ball damage is not reduced. The club's 'duty of care' should be exercised and the new Master Plan should reduce the potential for golf balls leaving the site by playing the hole in the opposite direction. With a new tee tucked into the north-eastern corner of the property the more abundant trees in this area should help contain errant tee shots within the golf course. The fact that the out-of-bounds fence is on the left hand side (hook side) rather than the right hand side as previously should minimise the potential for golf balls leaving the golf course property. In addition water on the left hand side of the fairway in the second portion of the hole and prevailing breezes will assist with keeping balls within the boundaries of the golf course.

Generally:

- **Bunkers** will be located such that they are not likely to provide the chance for skulled bunker shots to leave the golf course. In various situations this means that bunkers will not be located in front of greens where the greens are bordered to the rear by neighbouring houses. In other instances bunkers are to be located to discourage golfers from taking attacking lines on holes that heighten the chance of golf balls leaving the site or placing other golfers in danger.
- **Trees:** where appropriate, and where room allows we propose to add trees (and other suitable landscape plantings) to reduce the potential for golf balls leaving the course.

In Master Planning these changes we have observed current minimum setbacks and considered topography and vegetation to help ensure that no additional safety problems are created.

4.5 PLAYER AMENITY

4.5.1 AMBIENCE

The Club's brief reinforced the requirement to maintain the established and loyally supported ambience of Beverley Park in developing the new Master Plan. Our "Least Disturbance" design philosophy is entirely consistent with this objective, avoiding as it does the requirement for wholesale change for changes sake that other more invasive design philosophies entail. In practical terms our success in protecting the established ambience is evidenced by the new Master Plan's:

- Retention of the relaxed, open feel of the existing course;
- Preservation of the existing fairway corridors; and
- Requirement for the minimal removal of trees.

The construction scheduling strategies shown on the proposed Staging Plans in Appendix 1 further demonstrates our efforts to ensure minimal interruption to the overall ambience of the course during the implementation of the Master Plan.

4.5.2 PLAYER SAFETY

In view of the importance of maintaining at least current levels of player safety, we have been careful to ensure that the new Master Plan does not create a less safe playing experience for golfers. In part this will be achieved by ensuring new vegetation, at least in time, will assist with safety but also importantly where possible the direction of golfer traffic will be dictated by the incorporation of paths where this will help improve current concerns.

In addition to general planning we have added lakes and wetlands to discourage golfers from taking playing lines that would in practice see a greater likelihood for golfers on adjoining holes being struck when playing.

4.6 FAIRWAY STRATEGY

As mentioned earlier it is our belief that the greatest weakness of the golf course is the current state of the fairways. Whilst this has improved appreciably in recent weeks due to warmer weather and unrestricted irrigation practices this does come at a cost in terms of water purchased. Just as importantly, should water restrictions return this effort could go largely unrewarded because one dry month in summer could do enormous harm to the quality of the fairways as playing surfaces.

Consistent water supply underpins all maintenance works associated with ensuring the fairways are in good condition year round.

In addition to water supply most of the fairways suffer from a lack of evenness because a settlement of the fill they are built upon. This becomes an even bigger problem during and immediately after rainfall because these depressions hold water. We see the levelling of these fairways as being (with a consistent water supply) just as critical to lifting the overall presentation of the golf course. Ideally this would require removing the turf layer and regrading/reshaping the entire surface to take out the bumps and hollows and assist with surface water removal. This would be a very expensive exercise and disruptive to play and hence probably have a negative effect on the Club's cash flow. Instead, we feel this problem can be largely overcome by the constant topdressing of these areas with quality fill imported to the site. On many golf courses around Sydney we have been able to utilise free or money generating fill imported to the site to reduce the cost of reconstruction projects. Beverley Park's proximity to the coastal belt would in all likelihood mean that free or money generating sandy soils (suitable for topdressing) taken from development sites could be delivered for use at an appropriate time. This might require stockpiling however the cost differential between this approach and the stripping of the grass, redistribution of topsoils and re-grassing of the fairways would be substantial. (particularly when taking into account potential negative effects on green fee revenue)

Whilst this sort of exercise would take a number of years it wouldn't force closure of holes and therefore have little impact on golfer numbers.

4.7 WATER STRATEGY

At the present the golf course is solely reliable on potable water for irrigation and this has been a significant drain on club finances over the years or otherwise, during the period of water restrictions, detrimental to the quality of the fairways.

Kogarah Council, through a water savings initiative has installed a package sewerage treatment plant on land adjacent to hole 14 for irrigation use by the golf course and several other recreation facilities around the municipality. As yet this plant has not been commissioned despite being promised months ago. Regardless the Council are trying to negotiate a position with the Club to take a certain minimum amount each year at a price not too dissimilar to what the Club pays for potable water.

As an alternative, we have sort to include water storage on site to assist the club in being more self reliant in terms of irrigation water. This has been difficult because of the lack of available room for such structures but also the lack of depth to ground and tidal water levels. Despite this we have included 3 irrigation storage ponds within the Master Plan that should store of the order 15 mega-litres (out of an ideal total of 90 mega-litres desired for irrigation purposes each year). We feel the road catchment feeding through the golf course could be intercepted and channelled through these storage ponds and in all but the drier periods this would probably suffice in terms of irrigation needs. Detailed engineering analysis would need to be undertaken to shore up these figures however we see no other obvious means of the golf course becoming self sufficient in terms of irrigation water supply at a cost that could be affordable and sustainable to the Club.

4.8 STATUTORY ISSUES

Kogarah Council, through the Plan of Management has set a framework for how Beverley Park Golf Club will be managed, developed and maintained. This Plan of Management is in response to the introduction of the Local Government Amendment (Community Land Management) Act, 1988.

This Plan of Management addresses issues and group initiatives such as:

- Heritage Conservation;
- Green – Web Sydney;
- Southern Sydney Catchment Blueprint;
- Ecological Sustainable Development;

- Environmental Management;
- Stormwater management;
- Artificial wetlands;
- Landscape Design;
- Access; and
- Intensity of Use.

The above are some of the major headings and areas covered in the Plan of Management and lays the foundation for how the club should proceed with maintenance and development of what is a very precious resource within the Kogarah Council Area.

5 Beverley Park Golf Club - New Course Card

	MENS		LADIES			MENS		LADIES	
HOLE	PAR	METRES	PAR	METRES	HOLE	PAR	METRES	PAR	METRES
1	4	301	4	285	10	5	469	5	445
2	3	151	3	129	11	4	368	5	368
3	5	494	5	449	12	3	149	3	123
4	4	342	4	322	13	4	338	4	320
5	4	323	4	310	14	4	339	4	315
6	3	146	3	111	15	5	503	5	466
7	4	370	5	370	16	3	168	3	141
8	3	171	3	151	17	4	388	4	345
9	4	296	4	249	18	4	368	4	348
OUT	34	2594	35	2376	IN	36	3090	37	2871
					OUT	34	2594	35	2376
					TOTAL	70	5684	72	5347

5.1 HOLE BY HOLE ACCOUNT

Hole 1 - Par 4 301 285M

Comment

This new hole essentially follows the corridor of the existing 10th and 8th holes. The tee is moved forward of its original location by some 25 metres and with the removal of the current 10th and 8th greens and conversion of this area into fairway a short to mid length par 4 is able to be accommodated.

The location of the new tee means that there is a greater safety buffer between holes 1 and 9 as well as ensuring the line of the tee shot is played away from the property boundary by an additional 15°.

In addition, as part of the Kogarah Council Stormwater works the entry point for this system will be the rough between the fairway and the property boundary approximately 80 metres forward of the new tee. This waterway continues along the right hand side of the hole including the incorporation of a wetland in the location of the current 11th tee. As well as benefiting stormwater quality this wetland has been located as an additional deterrent for golfers on the tee ensuring they favour the left side rather than the right side of the fairway.

The new green complex will be linked with the new 8th green with the right hand side of the green being guarded by the aforementioned stormwater channel/creek. The left side of the green will be guarded by a solitary bunker. The left side bunker is located to penalise inaccuracy from the fairway which should only require a short iron or pitch, depending of course upon the length of the tee shot.

Hole 2 - Par 3 151 129M

Comment

Essentially this hole is an entirely new hole with a new tee constructed in the rough behind the current 7th green and playing toward the present 11th tee. This means that the out-of-bounds is now on the left hand side of the hole and the green is safely guarded by a copse of mature Melaleucas. In addition the stormwater channel/creek has been located on the left hand side of the green to further discourage golfers from aiming towards the out-of-bounds fence. The tee shot plays out of a 'chute' of trees to a green that is long and narrow to fit within its land area and will be a fairly difficult target to hit. A lone bunker guards the right hand edge of the green calling for accuracy from the tee. Because of the difficulty associated with reaching the green a reasonably flat putting surface will await to ensure a fair amount of birdies are made.

Hole 3 - Par 5 494 449M

Comment

The proposed new 3rd hole incorporates much of the existing 11th hole and the entire length of the existing 12th hole. The new tees are located in the approximate location of the public tees on the current 11th hole with the first landing area just short of the current 11th green. This green is removed and a wetland (as part of the council stormwater drainage initiatives) is located on the inside of the dog-leg to provide challenge, course aesthetics and separation (golfer safety) from the 7th hole. This wetland should act as a deterrent to golfers playing down the 7th fairway from the 3rd tee in an attempt to reduce the length of the hole.

The fairway is dissected by the council channel/creek between the first and second landing area however, where this channel/creek crosses the fairway it is anticipated that in all but the larger rainfall events this will be a substantially dry channel/creek.

A solitary fairway bunker is located on the line of play that must be carried if the green is to be threatened in two shots.

The last portion of the hole dog-legs again left and plays to a new green located in the space between the current 7th tee and the current 12th green. Several trees will need to be removed to accommodate this new green and its approach and a smallish green will be guarded on its left and right hand sides by sand.

The area currently occupied by the 12th tees and the land immediately in front of these tees will now be vacant and this area will be turned into a practice area for members with a new permanent spare/practice green located on this land.

At 494 metres this hole should play as one of the easier holes in the drier months of summer with the prevailing breezes shortening the hole somewhat.

Hole 4 - Par 4 342 322M

Comment

This entirely new hole plays from a tee located on and just behind the current 13th green and plays in an easterly direction for the most part in the fairway corridor currently utilised by the 6th hole.

The existing 6th green will be abandoned and this area will be converted to fairway and short rough.

Some pruning of trees will be necessary to ensure the tee shot has the necessary width with the only other real change to the hole corridor being that the new green will be located immediately south of the current 6th tee. Again this will require some tree removal but with the new 5th tee being located into the corner of the property, this area will free up considerably.

Being a shortish par 4 we have proposed a fairway bunker in the right hand rough to increase the challenge for golfers and the green will be bunkered on either side to place a premium on accuracy for the approach shot.

The current bridge will be utilised to convey golfers over the stormwater canal.

Hole 5 - Par 4 323 310M

Comment

This hole plays in the opposite direction to the current 14th hole. It does so to help restrict golf balls leaving the property with the change in direction meaning the out-of-bounds will now be on the preferred hook side of the hole.

The tee will be located virtually under the Hills Fig in the south-eastern corner of the property near to where the existing 14th green now sits. The green will be located on the existing 14th tee with further works necessary to ensure the portion of the fairway directly in front of the stormwater canal is raised and irrigated to provide a better playing surface for golfers. A bunker in the left side of the fairway is located to discourage this line of play.

The green will be bunkered on left and right hand sides to ensure accuracy is needed if par or better is to be made.

Hole 6 - Par 3 146 111M

Comment

Again, this is another entirely new hole with a new tee built in the north-western portion of the land used by the club on the Harslett Crescent side of the stormwater canal. The ladies tee is located altogether differently in that it sits high on a rock shelf to the south of the men's tee. This is the most elevated portion of the golf course and the women should have a great view of the new green from this tee.

The green will be entirely new, located adjacent to the current 12th green but located in such a way as to ensure that there is some fairway between the canal and the new green. Being a small hole the green will have a reasonable amount of undulation and be bunkered to ensure some skill is needed to make par or better.

A new all weather path will need to be constructed to direct traffic from the bridge over the canal to the 7th tee, crossing also a path that will convey golfers from green 3 to tee 4.

The current bridge will be used to convey golfers over the stormwater canal.

Hole 7 - Par 4 370 370M

Comment

The existing 7th hole is relatively untouched and remains as the new 7th hole.

The only modification to the hole includes the construction of the council stormwater channel/creek across the fairway between the first landing area and the current green. This channel/creek will be dry a substantial portion of the time probably only conveying water in times of heavy rain.

A fairway bunker is proposed on the right hand side of the fairway in part to direct golfers away from the 8th tee, while a new lone bunker is proposed at the front left green edge to support golfing strategy and help toughen the hole.

Hole 8 - Par 3 171 151M

Comment

Like the 7th hole the 8th plays from the existing tee but the hole is truncated to a par three of 171 metres for several reasons. Firstly, as a par three it allows for the new 1st hole to become a par 4 and the subsequent relocation of the tee away from the clubhouse. This new par 4 1st will assist in getting competition fields away more quickly. Secondly, and just as importantly, by moving the green substantially south of its current location we are able to lengthen the 9th tees helping them in terms of safety from tee shots off the current 1st hole as well as the tees shots off the current 8th tee.

The new 8th green will be part of a double green shared with the new 1st green. The left hand side of the green will be bordered by the council channel/creek and this portion will likely have water more frequently than other locations by reticulation of water through the system as necessary. The right hand side of the green will be framed by a lone bunker which will place a premium on accuracy if par is to be made on what should be one of the more challenging short holes on the new golf course.

Hole 9 – Par 4 296 249M

Comment

The new 9th hole plays down the same corridor as the existing 9th hole with the one major change being that the lengthening of the existing tees provides an increase in length by some 22 metres.

This lengthening has the another benefit in that it means that for a golfer who might have contemplated trying to drive the green from the existing tee this is no longer an option as it will become out of reach for all but the very longest of ball strikers. To help support this strategy and further remove any desire for reaching the green in one shot we propose to remove the large mound in front of the green and replace it with a wetland designed to make this strategy far more risky and potentially far less rewarding. Both of these measures should make the area around the current 1st tee, 9th green and 10th tee far more safe than the existing arrangement.

Hole 10 – Par 5 469 445M

Comment

The existing par 5 1st is to become the new 10th with modest alterations.

The first of those modifications will be the removal of the two existing fairway bunkers in favour of two new fairway bunkers at a more appropriate distance from the tee so as to ensure a challenge for the better golfers/longer hitters and not disadvantage the average members. This change should also help to rate the course with more difficulty when the new rating system comes into force in Australian Golf Clubs.

Otherwise, the green being one of the original greens on the course will need replacement in the not too distant future with a green suggested to have more undulations than the present green to help protect this short par 5 against easy par or birdie.

Hole 11 – Par 4 368 368M

Comment

This hole is essentially not altered from the original 2nd hole with the exception of the inclusion of a large water body along the left edge enforcing the dog-leg for all but the longer hitters.

This lake will be designed to encourage risk and reward golf for the lower markers by enticing them to carry a portion of the lake and achieve an easier pitch to the green. In time the green and its surrounds, inclusive of bunkers, will be reconstructed to further support this risk and reward type design strategy.

Because the lake will essentially be perched it will be impossible to see the green from the tee however markers such as the few remaining trees will make it possible to gauge the line of the green from the tee.

Hole 12 – Par 3 149 123M

Comment

This hole is unchanged from the current 3rd. However due to the shortish length of the hole when the green is rebuilt at a later stage we would like to see it become longer and more narrow with bunkering either side to place a greater emphasis on accuracy if par is to be made.

Hole 13 – Par 4 338 320M

Comment

Essentially this hole is relatively unchanged in the new Master Plan other than its hole numbering. The left hand side of the fairway bordering the rough between the new 13th hole and the new 11th hole will be mainly taken up with a new irrigation lake but this lake will be perched above the existing ground level and will not be obvious to golfers standing on the tee.

In time the green will be reconstructed with the putting surface becoming more narrow and with bunkers guarding each side to capture any slightly off line approach.

Ultimately par here will be a tougher proposition than it is at present.

Hole 14 - Par 4 339 315M

Comment

This hole is fundamentally the current 17th hole but played in the opposite direction. Because the current 17th green will remain as the new 17th green although played in the opposite direction new tees need to be constructed adjacent to the 17th green. The tee shot plays directly up the existing 17th hole, in a northward direction to where the hole dog-legs to the right to the existing 16th green.

At present the 16th green is not proposed to be changed but as with all other greens it is proposed to be reconstructed at some point in the future. At that time the green will be relocated a little west of its current location by removing several of the Melaleucas that frame the existing 17th tee.

The portion of rough between the current 16th and 17th holes that is to become fairway will require modest tree removal. A new fairway bunker is proposed for the inside of the dog-leg to place an emphasis on accuracy from the tee.

Hole 15 - Par 5 503 466M

Comment

Without doubt this is one of the most dramatic changes proposed for the golf course in terms of implementation of the new Master Plan. The majority of the hole plays along the golfing corridor of the current 16th hole but in the opposite direction. This has been done to place the out-of-bounds on the 'hook' side of the hole, which will significantly reduce golf balls from threatening homes in Battye Avenue.

A new tee is to be constructed at as low an elevation as possible in the north-west corner of the property adjacent to the current 16th green. To ensure a reasonable view of the fairway from the tee several trees will need to be removed or pruned, however the vast majority of the trees in this rough will be left alone and these trees will provide a very dense screen as a prevention to balls leaving the golf course. As evidenced on site and from the aerial photo of the site the trees at the northern end of the rough are taller and more significant in terms of density and spread and they will provide (along with the out-of-bounds now being on the left hand side of the hole) a much safer environment for neighbours.

The second half of the hole encompasses portions of the current 16th hole as well as a portion of the current 15th hole. Every significant tree as well as any new planting will be utilised as a screen for golf balls struck left of the ideal line and which would potentially threaten the adjacent properties. We see that by doing this one and perhaps two homes would be potentially threatened (but less so than at present) instead of the 13 or 14 in Battye Avenue that currently get hit. In conjunction with these structural changes and strengthening of the out-of-bounds problem a new irrigation water storage pond is proposed on the inside of the second dog-leg to help ensure the vast majority of golfers play a conservative line with their second or third shots rather than try and attack the green.

A new green will be located in the current 15th fairway and will be bordered by a third irrigation storage pond right of and to the rear of the green. To place an emphasis on accuracy from the fairway a lone bunker is to guard the green along its left edge. This bunker should also help discourage golfers playing an aggressive line from the fairway to the green over the inside of the dog-leg.

Hole 16 - Par 3 168 141M

Comment

In line with the Club's express desire to make the golf course more safe for golfers and neighbours alike we have created this entirely new par 3 partially on land left vacant by the closing of the driving range but also on the first portion of the current 15th hole.

This new par 3 will play in a southerly direction over the edge of an irrigation storage pond and will likely be constructed on fill which will see the entire hole played at or near street level. This will help the levels of the hole relate well with the levels of the adjacent pond.

Trees left and right of the proposed new green will remain to ensure as much safety as possible is afforded golfers on the green when putting out as well as, in the case of the large tree on the left hand side of the green provide a safety buffer with the adjacent road.

This should prove to be one of the stronger and more attractive of the par threes and a long and narrow green supported by greenside bunkers on each side should yield few birdies.

Hole 17 - Par 4 388 345M

Comment

This partially new hole will become the longest of the par 4's at Beverley Park once the Master Plan has been implemented and will almost definitely play as such, particularly when the prevailing wind is blowing.

Like many other existing holes in the layout, this new hole will play in the opposite direction to the current 5th however along the same corridor. A new tee is to be constructed at the rear of the current 5th green with the green being abandoned when this is done. The drive will require accuracy as the right hand side of the fairway is to be guarded by a large storage pond that will delight in grabbing anything sliced very far off line.

The second portion of the hole continues along the play-line of the current 5th with the current tees removed and converted into fairway with the current 17th green utilised as the green for the new 17th. Whilst played in the opposite direction the current green is very flat and the fact that we would now be playing to it from the opposite direction should not be a great problem in terms of contours at least in the short term. In time this green should be rebuilt in its current location to ensure it is more receptive to balls hit from the new fairway.

Hole 18 - Par 4 368 348M

Comment

The closing hole is to also remain relatively unchanged with the main aim of changes to remove the left hand side fairway bunkers in favour of new bunkers at a length that will trouble better players.

In time the green would also be reconstructed (and relocated a little in an easterly direction) with the result being a longer and more narrow green that will be bunkered so as to ensure more accuracy is required from an approach shot if par is to be made.

6 CONSTRUCTION CONSIDERATIONS

In finalising the Master Plan for Beverley Park we were mindful of various issues that can impact on the delivery of the improvements. These issues include timing, staging and the logistics associated with construction works such as duration, impact on golf play, access points etc. It was made clear that cost should not be a factor and that this master plan should be a document to work toward in the coming years at Beverley Park.

6.1 Timing

Timing of each stage of construction will be as and when the Beverley Park Golf Club Board determines that funds are available.

6.2 Staging

We have compiled eight individual Staging Plans that encompass the total works associated with the layout changes deemed appropriate under the Master Plan itself. We believe this to be the optimum staging arrangement for reconstruction works in terms of minimising disruption for the golfers and ensure that 18 holes remain in play at all times. It would also be possible to undertake portions of stages only. The first of the eight stages puts in place necessary temporary facilities to ensure a playable course is achievable when the biggest of the stages (Stage 2) is undertaken. Stage two assumes that the Kogarah Council inspired works deems that this area will be affected by anticipated drainage works and that it would make sense that associated golf layout works be done in conjunction with the drainage works.

Essentially the eight stages are comprised of the following construction works (all hole numbering refers to new numbering rather than current):

- i) **Stage 1:** new temporary greens on holes 7 and 8, new permanent temporary / practice green on hole 3.
- ii) **Stage 2:** new tee 1, new green 1, new green 8, new green 2, new tee 3, new tee 2, new rear tee on hole 9, new channel/creek/wetlands.
- iii) **Stage 3:** new channel/creek across fairways 3 and 8, new green 3, new green 6.
- iv) **Stage 4:** new tee 6, new tee 4, new green 5, new temporary green 4.
- v) **Stage 5:** new green 4, new tee 5 and new fairway bunkers.

- vi) **Stage 6:** new hole 16, two new irrigation ponds, new green 15.
- vii) **Stage 7:** new tee 17, revised fairway hole 17, revised fairway 15, new tee 15.
- viii) **Stage 8:** new main irrigation storage dam, new tee 14, new tee 15, revised fairway hole 14, and new fairway bunkering.

6.3 Logistics

Haul Roads

As the site has road frontage on nearly all sides we do not anticipate the need for long haul roads throughout the golf course except in the case when the central and largest irrigation pond is constructed.

Where possible any necessary haul road system would utilise existing tracks/paths with additional temporary roads linking these paths where appropriate.

Access Points

Construction access points will be via gates to the site around the perimeter of the golf course and ensure where possible little interference to play.

Stockpiles

Any fill imported to the site for levelling fairways would be either delivered to the fairway being reconstructed or otherwise stockpiled on land adjacent to the greenkeepers shed.

7 PRELIMINARY CONSTRUCTION COST ESTIMATE

Following is a breakdown of probable costs for the proposed reconstruction works at Beverley Park Golf Club. Note that prior to confirming actual costings detailed design would need to be undertaken. Costings have been broken into each of the eight separate stages, which are outlined below:

Item	Works	Cost Estimate	Construction Period
STAGE 1			
1.1	New temporary green hole 7	\$15,000	4 weeks
1.2	New temporary green hole 8	\$15,000	
1.3	New temporary/ practice green hole 3.	\$70,000	
	Total:	\$100,000	
STAGE 2			
2.1	New 1st tee	\$25,000	12 weeks
2.2	New green 1	\$75,000	
2.3	New green 8	\$75,000	
2.4	New green 2	\$95,000	
2.5	New tee 2	\$25,000	
2.6	New tee 3	\$25,000	
2.7	New canal/creek/wetlands	N/A	
	Total:	\$320,000	

Item	Works	Cost Estimate	Construction Period
STAGE 3			
3.1	New green 3	\$95,000	5 weeks
3.2	New green 6	\$75,000	
3.3	New canal/creek/wetland	N/A	
	Total:	\$170,000	
STAGE 4			
4.1	New tee 6	\$30,000	6 weeks
4.2	New green 5	\$75,000	
4.3	New tee 4	\$25,000	
4.4	New temporary green 4	\$10,000	
	Total:	\$140,000	
STAGE 5			
5.1	New green 4	\$75,000	4 weeks
5.2	New tee 5	\$25,000	
5.3	New fairway bunkers	\$15,000	
	Total:	\$115,000	
STAGE 6			
6.1	New tee 16	\$25,000	10 weeks
6.2	New green 16	\$95,000	
6.3	New storage/irrigation ponds	\$300,000	
6.4	New green 15	\$75,000	
	Total:	\$495,000	
STAGE 7			
7.1	New tee 17	\$35,000	4 weeks
7.2	Revised fairway on hole 17	\$20,000	
7.3	Revised fairway on hole 15	\$20,000	
7.4	New tee 15	\$30,000	
	Total:	\$105,000	

Item	Works	Cost Estimate	Construction Period
STAGE 8			
8.1	New main irrigation storage dam	\$500,000	10 weeks
8.2	New 14 th tee	\$25,000	
8.3	New 15 th tee	\$25,000	
8.4	Revised fairway on hole 14	\$20,000	
8.6	New fairway bunkering	\$30,000	
	Total:	\$600,000	
Grand Total Stages 1 - 8: \$2,045,000			

Irrigation:

We have allowed for the cost to reinstall existing irrigation and construct new paths where necessary in each aspect of the listed construction projects.

Other:

On several of the projects we have worked on involving water irrigation storage the Club's have been successful in their application for government grants to undertake this work. Whilst we have budgeted \$800,000 for the construction of and linking of the three irrigation ponds a considerable amount of this could be negated by securing of a government grant for the work. Also, as each of these ponds are essentially perched the actual cost to construct the ponds could be reduced if they were constructed essentially with fill imported to the site. Given Beverley Parks central location within metropolitan Sydney means this form of cost reduction is a distinct possibility.

Budgetary Assumptions:

- The impact of the GST on the overall budget has not been considered.
- We have made no allowance for design and project management fees for each project which may be of the order of 5 to 8% of the actual construction costs.

8 APPENDIX 1 - STAGING PLANS