

# Amity Narangba

> Conception to plan

An in depth study of civil engineering for master planned land development in South East Queensland



Client	Dahua Pointcorp Pty Ltd
Location	Moreton Bay Regional Council Area
Type	Land development
Project scope	Conception to plan

A master planned development by Pointcorp and Dahua Group, Amity will be part of an expanding community, with lush green parklands, pathways and quality homes. The project is being completed in 10 stages and will ultimately consist of 467 lots.

This is a pioneering development in the Narangba East area.

RMA is providing extensive civil, traffic and stormwater services from pre DA to construction for this landmark project in the Morten Bay Regional Council area.

## Site background and challenges (Due diligence to DA approval)

RMA were engaged to assist our client in due diligence investigations, following on to preparing development approval, civil, traffic and stormwater engineering services.

The site was identified for future residential zoning. Some high-level planning existed in various forms held by government agencies. These were inconsistent across all agencies and upon interrogation were superseded.

Some significant site challenges included:

- No servicing by sewer infrastructure, with minimal information regarding the future intent for servicing. The site's nearest connection was some distance away.
- Several stormwater discharge points requiring multiple stormwater treatment and management solutions.
- Some high level transport planning overlays across the site that reduced development yields
- The development due diligence was carried out during the transition and implementation of the new MBRC planning scheme. Both scheme benefits required consideration. The client elected to adopt the new scheme (MBRC) requirements.
- During development approval, both council and all consultants were dealing with a new scheme and requirements.

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## Advantages of RMA's Input

### Due diligence and overall outcomes

During the due diligence, we sought to rationalise elements of uncertainty related to the land parcels and 'out of sequence nature'. We developed a multi-disciplined approach which involved;

- Preliminary analysis of existing network capacities (traffic, stormwater, sewer)
- Multiple workshops and engaging with relevant local and state government agencies
- Ground truthing potential sewer connections, assessing different options
- Gaining in principal support for preliminary concepts, to refine yields and allow indicative costings to be prepared.
- Worked collaboratively with the greater consultant team to integrate various elements and negotiated outcomes into a development concept.

Once the site had been contracted, our team looked to refine the due diligence concepts to a greater detail, prior to submission of the development approval application.

Some notable items included;

#### Sewer connection.

Following the options investigated during due diligence, the option requiring the least upgrades to existing systems was to install a new pump station and approximately 2km rising main to the nearest trunk connection.

During DD, we secured advice that should this option be employed, all works from the site, including the pump station would be offsetable.

We had also secured some very preliminary in principal support of this alignment with several government agencies.

The alignment planning process required careful consideration of QR crossings, vegetation, service conflict, multiple land ownership and stakeholder input.



We achieved a sewer connection approval, in line with the preliminary 'in principal' agreements achieved in the due diligence, including trunk offsets.

In an attempt to understand constructability constraints, we also did an alignment walk with a known contractor to integrate advice into the design.

Potholing was also conducted to locate and reduce potential for existing service conflicts.

#### Traffic and Road Network

During the DA process, Council developed new road planning documentation, not tabled in due diligence prelodgements. This new planning required road resumptions and significant widening and vertical changes to the existing road. These vertical changes had a flow on effect to implicate an existing 675mm water main.

The council were also still considering their overall transport network strategy for the area.

Through a series of workshops with council, we were able to negotiate a position that;

- Delayed the external traffic works, to allow initial stages of the development to proceed and defer trunk water relocation costs
- Agree on creditable works
- Come to a workable solution regarding internal road widths and classifications.
- Minimise other external intersection upgrades

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## DA Process

During the DA process, several workshops were undertaken to collaboratively work through implementation of the new planning scheme. This iterative approach allowed design solutions to be conceptually shared without needing detailed reporting.

The solutions, once reviewed by council, were then either refined or incorporated into the site layout. During this phase several sketches and agreements were reached and recorded.

The collaborative approach leading to lodgement resulted in minimal RFI's for the DA. The record keeping of agreements on technical matters also proved invaluable when going into detailed design due to council staff changes.

## Site background and challenges (Operational Works and Construction)

Once development approvals had been achieved, the project moved into detailed design.

Given the complexities involved in getting this 'out of sequence' land parcel onto the market, the conditions of approval required a number of subsequent approvals.

The same challenges faced in the development approval process regarding implementation of a new scheme were also apparent in detailed design.

The service utility also required considerable supporting studies for the trunk sewer infrastructure,

as it had foreshadowed this infrastructure not to be needed for sometime.

## Detailed design approval with council.

We again employed a collaborative approach to working through detailed design solutions with council prior to lodgement. Council also invited us to use the preparation of operational works, towards accrediting RMA as MB+ self certifiable consultants.

## Pump Station and Rising Main Approval

Entering into detailed design, we continued with previously employed processes to work towards a design solution that could be approved by multiple stakeholders, constructed and maintained.

We had additional workshops with contractors on construction methods for different sections of the rising main, based on length constraints. This constructability advice was tailored into the detailed design.

We had extensive coordination with the service provided to work through the design.

## Tendering and Construction

Throughout the design process, our design process was highly collaborative with government stakeholders, the consultant team, and competent contractors on efficient construction practices.

Our team tendered the project, with the final contract costs relative to initial advice given during the projects evolution.