



# Engineering information pack

Guidelines for development applications

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## What is the purpose of these guidelines?

These guidelines have been developed to provide a general summary of the engineering requirements for development in Ku-ring-gai and to help applicants understand and meet them.

## What engineering information should be submitted with a DA and why?

We require certain documentation to be submitted with a development application (DA) to allow for an informed assessment as required by Section 79(C) of the *Environmental Planning and Assessment Act 1979*.

For engineering assessment, some or all of the following matters are to be addressed:

**Water management:** to preserve the natural environment, reduce consumption of potable water, enhance neighbour amenity and consider Council's drainage assets and network.

**Traffic and parking:** to allow development to proceed in an orderly fashion and maintain safety and amenity for residents, road users and pedestrians.

**Geotechnical:** to preserve the integrity of neighbouring lands, structures and groundwater dependant ecosystems..

**Waste management:** to minimise the environmental impacts of waste.

*Note: our development engineers do not assess structural drawings.*



## Water management

### What site coverage am I allowed?

In development engineering terms, site coverage is the same as hard surface area or built-upon area (planning definitions may differ, so it is important to check the context when doing your calculations). It is the impervious area of a site which generates run-off during rain as opposed to the landscaped area, which accommodates some infiltration of rainwater before allowing an evenly distributed surface flow following the natural contours of the land.

Generally, site coverage is restricted by development standards or controls contained in Local Environmental Plans (LEPs) or Development Control Plans (DCPs). If your property is a low level property without the benefit of a drainage easement and you are proposing to construct an on site dispersal system or use an existing on-site dispersal system, you will need to keep to quite a low site coverage, usually 30% of the site area. This includes all hard surfaces such as paving, driveway, garage and roof.

More information can be obtained from Council's Development Control Plans.

### What is a drainage easement?

A drainage easement is the legal right to convey stormwater run-off from your property over another person's property. Legal gravity drainage of stormwater is the most expedient way of dealing with stormwater because it allows flows to follow the natural fall of the land to reach the downstream public drainage system.

An easement may or may not contain a pipe. If there is a pipe, depending on its age and whether there are trees along the route, it may need repair and/or replacement. Generally, the responsibility for maintenance of an interallotment drainage pipe rests with all the benefitting owners. Council does not become involved with the maintenance of interallotment drainage pipes.

A pipe or channel which has been installed to convey run-off from a road is maintained by Council.

*Note: Sewer mains are not required to be covered by an easement.*

### Does my property benefit from a drainage easement?

We do not keep title certificate information or complete records in relation to drainage easements. Some easements shown on deposited plans are not registered. If there is a drainage easement on your property, your title certificate will have a notation under Second Schedule with a number. This is the instrument number. The instrument describes the terms of the easement, including which properties, roads or authorities have the benefit of the easement. Download title and instrument details from NSW land and property Information: [www.lpi.nsw.gov.au](http://www.lpi.nsw.gov.au)

You will need to check the terms of any easements between your property and the downstream drainage system, usually the nearest road. A drainage easement which has been created to drain water from Council's road should not be used to convey private property run-off and the terms of such an easement must be changed to allow run-off from a development site to be connected to such a system.

### What if my neighbour refuses to grant me a drainage easement?

If your site or development is not suitable for on-site dispersal of stormwater, for example because your proposed built-upon area is too high or your development is a dual occupancy or other use more intensive than a single dwelling, then you will need to negotiate a drainage easement through the downstream property(ies), preferably by obtaining a letter of agreement from the owner(s) of the downstream property(ies).

A plan showing the proposed easement route should be provided with your DA and if there are any trees along the route, an arborist's report will be required as well. If the trees are part of a critically endangered ecological community, you may also need additional expert ecological advice.

If it appears to be feasible to obtain an easement, you may be granted a deferred commencement consent, with the registration of the drainage easement as Schedule A, which means it needs to be completed before the development consent can operate. It would then be up to you and your consultants or solicitors to negotiate with the neighbour(s) to formalise the easement and have it registered.

If the negotiations break down, we are not able to assist any further. You may have the option of an appeal to the Supreme Court under Section 88K of the *Conveyancing Act 1919* but you should obtain your own legal advice in this regard.



## What is on-site detention?

On-site detention (OSD) works by holding back or 'detaining' stormwater temporarily within a property and then releasing it at a controlled rate. It is used to control the rate of run-off and reduce peak discharges during storms to minimise the load on pipelines and to minimise flooding. OSD does not alter the total volume of stormwater leaving the site and normally does not allow the stormwater to be used before it leaves the site.

## What is on-site retention?

On-site retention (OSR) is a stormwater management system that keeps water on-site to be used again in the water cycle or as an alternative to mains water. OSR is used to control the volume of run-off during rainfall and storms. Because the stormwater is not sent directly off the site, on-site retention reduces run-off draining to pipelines, minimises flooding, conserves water and helps to reduce the impact of development on the natural water cycle. A number of different techniques may be used, including rainwater tanks, infiltration trenches or bioretention trenches.

## What is on-site dispersal?

On-site dispersal is an option for disposal of stormwater on a property which does not have gravity drainage to a road or does not benefit from a drainage easement. It is only available for single dwelling development. Stormwater run-off from hard surfaces or overflow from a rainwater tank is piped to a trench in the backyard. Because the soils in Ku-ring-gai are usually clay-based, a dispersal trench needs to be quite large as infiltration is slow. A row of trenches may be required. The system needs to be 5m from the downstream boundary, 3m from a structure and not within the canopy of any tree.

More information: [www.kmc.nsw.gov.au](http://www.kmc.nsw.gov.au)

## If I sell my property, how will the new owners know that there is an on-site retention / detention system to be maintained?

If you have installed an on-site detention or retention system, a condition of your development consent will require you to register a positive covenant and restriction on the use of land on your title. The terms of the positive covenant will require you (the owner) to maintain the system so that it functions as intended and the terms of the restriction on use will require you not to do anything to interfere with the operation of the system. These requirements, once registered, will be shown on the title certificate for the property.

## Conditions of consent require me to register a positive covenant and restriction on the use of land over my OSD/ OSR system. How do I do this?

The way to register these items is to obtain the forms 13PC and 13RPA:

[www.lpi.nsw.gov.au/land-titles/dealing-forms/land-title-dealing-forms](http://www.lpi.nsw.gov.au/land-titles/dealing-forms/land-title-dealing-forms)

Instructions on completing them also provided:

The forms then need to come to us for endorsement and a fee applies. They also need to be signed by the mortgagor and the owner(s) of the property. You or your solicitor then lodge the forms with the Department of Lands for registration. When the positive covenant and restriction on the use of land have been registered on the title, you need to send a copy of the new title certificate to your principal certifying authority to demonstrate that you have complied with the condition of development consent.

## BASIX water score

For certain types of development, you will be required to submit a BASIX certificate to demonstrate that your development will achieve the State Government's water and energy saving targets.

More information: [www.basix.nsw.gov.au](http://www.basix.nsw.gov.au)

Your BASIX Certificate will have certain commitments to achieve the target water score, such as the use of water saving fixtures, rainwater tank, stormwater tank or greywater treatment. Where ticked on the form, the measures are required to be shown on the DA plans. Make sure this is the case or your DA may be rejected.

If you have selected a greywater treatment system in your BASIX commitments, you should read the following information, because a greywater treatment system requires a separate approval from Council under Section 68 of the *Local Government Act 1993*.

[www.kmc.nsw.gov.au](http://www.kmc.nsw.gov.au)

If you have chosen a stormwater tank, you should be aware that it must be separate to any detention tank you are required to install, as the reduction in mains usage required by BASIX means the stormwater must be available for irrigation, whereas an on-site detention tank is designed to drain dry after a couple of hours.

## Water quality

Water sensitive urban design is the practice of designing structures and landscape features that contribute to developing a sustainable natural water cycle. These features include rain gardens, sand filters and swales, as well as rainwater tanks and infiltration trenches. The collection and treatment of water on-site reduces the volumes flowing off-site which can convey pollutants to natural watercourses and bushland downstream.

More information: [www.wsud.org](http://www.wsud.org)

## Do I need an overland flow assessment (flood study)?

You will need a flood study if you are proposing works which may be affected by overland flows from the trunk drainage system (this includes creeks, open channels and underground pipes). These flows can occur when there are blockages in the system or during extreme rainfall.

The purpose of a flood study is to propose adequate measures to ensure that habitable rooms, garages and swimming pools are not subject to inundation (flooding) and that development does not change flood levels on neighbouring lands, including Council's roads and parks.

A suitably qualified and experienced civil / hydraulic engineer must carry out the study and will need to provide a detailed survey plan of the site as well as plans showing the proposed works. For some catchments, we can provide design flows upon application using the search for Operations Records form at the following link:

[http://www.kmc.nsw.gov.au/I\\_want\\_to/Pay\\_register\\_request\\_or\\_reply/Find\\_a\\_form](http://www.kmc.nsw.gov.au/I_want_to/Pay_register_request_or_reply/Find_a_form)

*Note: Some underground pipes are not covered by drainage easements. If your property has a depression through it or drainage pits outside, you should check with your surveyor or engineer regarding the likelihood that a pipe is present. We may have information in our records but the accuracy of the information is not guaranteed as some drainage systems are so old that no records are available.*

*You will also need to have your surveyor mark the actual location of the pipe on the survey plan even if there is a drainage easement, because the pipe may not be within the easement.*

*Where the property is traversed by a watercourse, our riparian controls also apply and you should first familiarise yourself with them because you may need to site your development outside the riparian zone.*



# Subdivision

## What are the steps involved in the subdivision process?

### Development application

Subdivision needs development consent under the *Environmental Planning and Assessment Act 1979*, just like other types of development. First you need to lodge a development application, accompanied by the correct supporting documentation (see our DA Guide).

The documentation must include a plan showing the new lots, including any new easements, rights of carriageway or other interests intended to be created over the new lots.

### Construction certificate

Assuming that approval is granted, you may have to do some civil works such as construction of roads, driveways or interallotment drainage. You will need a construction certificate for these works. You can get this from us or a private certifier accredited for subdivision work.

Construction certificate plans for subdivision works are prepared by a civil engineer or consulting surveyor. You must pay your Section 94 contribution before your construction certificate plans can be approved and issued.

Works which are required to provide only water or sewer services to the new lots do not require a construction certificate but are still subject to other requirements such as threatened species legislation and our tree preservation controls.

### Subdivision certificate

When the works have been completed, inspected and a certificate of completion issued, your surveyor will prepare the subdivision plan (also called the linen plan - a plan showing the new lots and the location of any new easements, restrictions, rights of carriageway etc) and administration sheet (the form containing the administrative data, signatures, seals and certifications for the plan).

Sections 88 and 89 of the *Conveyancing Act 1919* describe the possible interests such as easements, rights of carriageway, positive covenants or restrictions which may be created on new lots. These need to be listed in a Section 88B Instrument, which will be registered with the Department of Lands along with the subdivision plan and administration sheet. Your surveyor or solicitor may prepare the Section 88B Instrument.

You should also check your development consent for any other requirements eg Section 73 Certificate, other certifications, and Section 94 fees (if not already paid). You should then lodge all

the documentation with us, complete the subdivision certificate application form and pay the processing fee, which is based on the number of new lots.

When satisfied that the documentation is complete and that all conditions have been complied with, we will endorse the administration sheet, the Section 88B Instrument and a copy of the subdivision plan.

You or your agent can then collect the documentation from us for endorsement by the mortgagor and owners prior to lodgement at the Department of Lands for registration. When the documentation has been registered, a deposited plan number will be issued and the lots will exist, together with the easements etc.

### Strata subdivision

For a strata subdivision the process is similar, except that you need to lodge a surveyor's certification with your subdivision certificate application form to the effect that the strata plans are consistent with the approved and as-constructed building. For strata subdivision of a new building a separate Section 73 Certificate is not needed.



Only certain types of development require a Section 73 Certificate. These include Torrens Title subdivisions, dual occupancies and construction of a dwelling on a vacant lot created before 1964. Torrens Title subdivision of an approved dual occupancy requires a separate Section 73 Certificate for the subdivision component. A full list of developments which require a Section 73 Certificate is available under Steps for First Time Developers:

[www.sydneywater.com.au](http://www.sydneywater.com.au)

## Traffic

### Why do I need a construction traffic management plan at DA stage?

If your development is on a major road such as the Pacific Highway, Mona Vale Road, Ryde Road, Boundary Street, or a sub-arterial road such as Burns Road, Horace Street or if it will involve prolonged heavy vehicle movements in residential areas (eg basement excavation), then we will need to assess the likely impacts of construction on traffic conditions, pedestrian movements etc. Refer to our DA Guide for the matters to be addressed.

## Sydney Water Section 73 certificate

### Why do I need a Sydney Water section 73 certificate?

This certificate is issued by Sydney Water under Section 73 of the *Sydney Water Act 1994*.

The purpose of a Section 73 certificate is to ensure:

- your development or subdivision is served by Sydney Water's water, sewer and, in some cases, stormwater systems
- you have paid any necessary contributions towards existing infrastructure.

The process is outlined on Sydney Water's website under Plumbing,

Building & Developing:

[www.sydneywater.com.au](http://www.sydneywater.com.au)



## Council's infrastructure and works in the road reserve

### Do I have to pay the infrastructure restorations fee?

The infrastructure restorations fee covers inspection of Council property which may have been damaged during development works and also wear and tear on the wider road network caused by development activities.

The fee is non-refundable and is to be paid to us prior to the issue of a construction certificate or commencement of any works. The applicant, builder or developer are responsible for the cost of repairing damage to Council property. The amount of the fee which applies to your development can be calculated from Council's fees and charges available on our website [www.kmc.nsw.gov.au](http://www.kmc.nsw.gov.au) using the estimated cost of development provided on your development application form.

### Vehicular access and works in the road reserve

The section of your driveway between the kerb and the property boundary is on Council land and you need approval under Section 138 of the *Roads Act 1993* to do works on Council land.

If your property is located in a very steep area or there is something unusual about the location, such as excessive crossfall, then it is a good idea to have your designer prepare a section through the new driveway crossing to submit with your DA. It can be helpful to look at other crossings in the vicinity to see if they show signs of scraping or if they have a different layback (gutter crossing) to the standard layback eg pipe crossing, gutter bridge. Councils Driveway Works Request form can be found at the following link:

[www.kmc.nsw.gov.au/I\\_want\\_to/pay\\_register\\_request\\_or\\_reply/Find\\_a\\_form](http://www.kmc.nsw.gov.au/I_want_to/pay_register_request_or_reply/Find_a_form)

When you are carrying out your development, you need to get our approval to do any works in the road reserve, even if it is only within the turfed area or the footpath. You or your contractor must apply to us for a road opening permit and pay the restoration fee each time. The applicable fees are listed on our website [www.kmc.nsw.gov.au](http://www.kmc.nsw.gov.au)

## Geotechnical engineering and hydrogeology

### Do I need to provide a geotechnical report?

Our DA Guide requires that you submit a geotechnical report if you are proposing excavation to a depth of 2m or more. This is particularly important if the zone of influence of the excavation (often taken as twice the depth) will be near the boundary of any neighbouring property. In Ku-ring-gai, the concern is more likely to be with vibration resulting from rock excavation than with removing support from neighbouring structures.

Generally, the geotechnical engineer will need to carry out a subsurface investigation comprising boreholes or test pits to provide an informed report. It may be acceptable to submit a letter report for smaller developments, based on the engineer's previous experience in the vicinity.

In some circumstances, you may also need to obtain a hydrogeological report, if large trees or significant vegetation are located downslope of a proposed basement excavation. This is a highly specialised field and you should also consult an ecologist for advice. If your development will require dewatering then it may be

If your development will require dewatering then it may be integrated to NSW Office of Water because of the need for an aquifer interference approval.

