6 AUTHORITY REQUIREMENT AND DOCUMENTATION

6.1 INTRODUCTION

Any particular project – a land development, or a mixed residential development, or a simple building project – requires authority approval at various stages of its development. Land drainage of stormwater for instance, is one of several technical components of the project that needs authority approval. Technically speaking, a project cannot take off until approval for all the requirements has been obtained.

An efficient approval system for a project development is ideally required. Documentation of the approval requirements is essential and all requirements should reflect uniformity in standards and practices. The approval system should be efficient and transparent.

This chapter presents an account of submission procedure for seeking authority approval. The overall approval processes for land development currently adopted by the approving authorities are discussed with emphasis on storm drainage.

6.2 AUTHORITY REQUIREMENT

6.2.1 Application for Landuse Conversion

Landuse conversion is a standard procedure that needs to be carried out first in any land/property development. Applications for landuse conversion must comply with the National Land Code and must be lodged with the District Land Office. A proposed development shall be compatible with the established Structural/Local Plan of the locality. It is good practice for the developer, or their consultants, to meet with and consult the approving authorities to determine their requirements prior to submission. This will reduce the time for review, comment, and processing of the application. Figure 6.1 shows a typical approval process flowchart for landuse conversion.

6.2.2 Application for Land Subdivision

For submission purposes, a development layout shall be proposed and signed by a Registered Planner. Drawings related to storm drainage shall be signed by a Professional Engineer and shall adequately show the reserves required for drainage including detention/retention facilities, etc.

As part of approval conditions, the landowner shall be required to pay a drainage contribution. Figure 6.2 shows a generalised flowchart used in the application for land subdivision. Submission requirements may vary slightly from district to district.

6.2.3 Building Plan Submission/Approval

The next step after landuse conversion and subdivision is to apply for Building Plan approval. Application shall be submitted to the Local Authority concerned, and shall comply with the Uniform Building By-laws applicable to the locality.

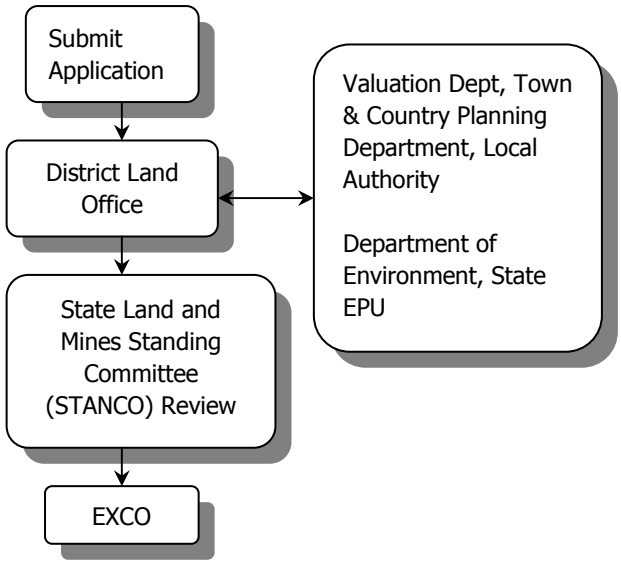

Figure 6.1 Typical Process Flowchart for Landuse Conversion Approval

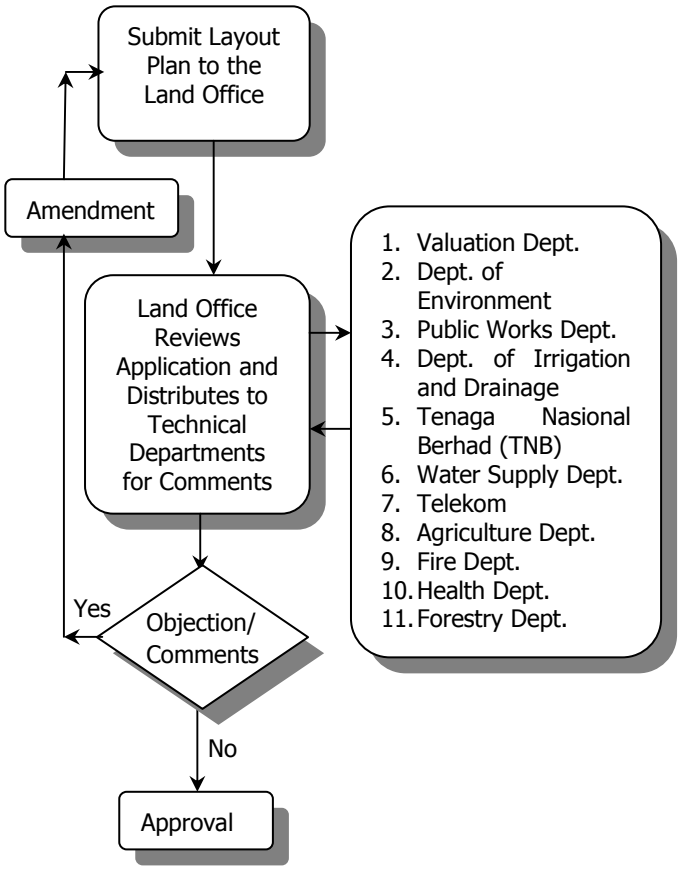

Figure 6.2 Typical Process Flowchart for Land Subdivision Approval

Stormwater management plans and design calculations shall also be submitted. Engineering plans, together with design calculations, shall be signed by the respective Professional Engineers (Civil & Structure, Mechanical & Electrical) registered with the Board of Engineers, Malaysia. Submission shall also include storm drainage layout complete with design calculations. Submission requirements may vary slightly from authority to authority.

The Local Authority shall consult other agencies for their comments. Figure 6.3 shows a generalised process flowchart for a Building Plan approval. Authority approval will normally be given upon compliance.

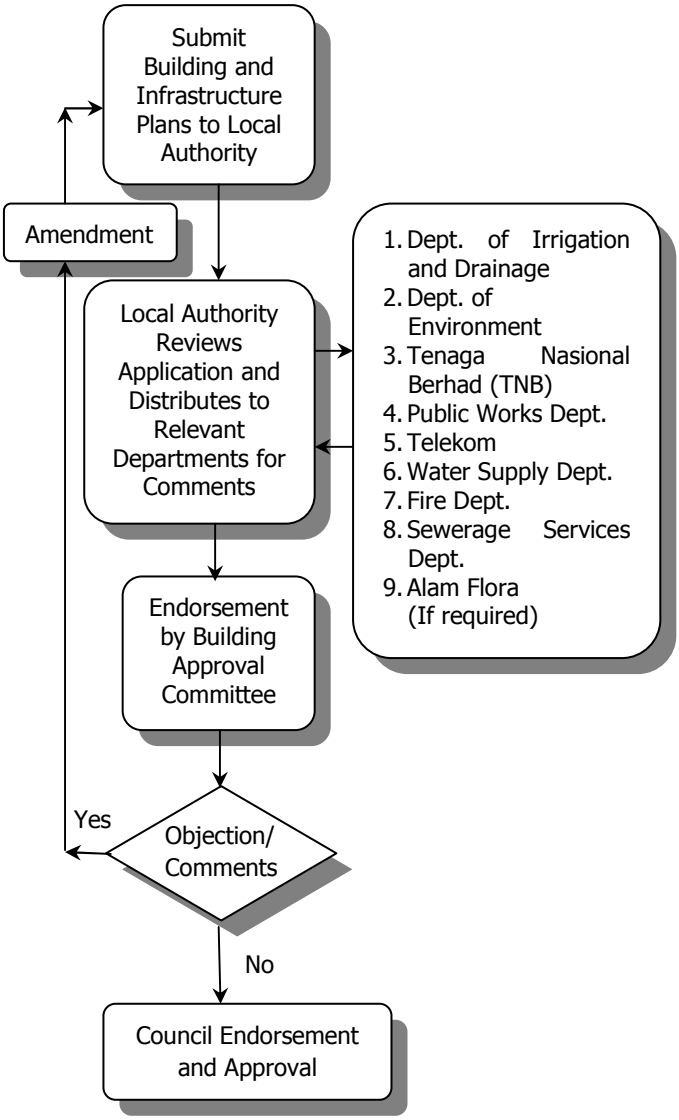

Figure 6.3 Process Flowchart for Building Plan approval

6.2.4 Requirement During Construction

For a land/property development, the project owner shall notify the Local Authority on the commencement of the works. The Authority shall then conduct site checks to ensure compliance. In accordance to the Uniform Building By-laws, the following forms, applicable to building works, shall be submitted for approval:

1. Form B - Notice of Commencement or Resumption of Building Operation
2. Form C - Notice of Completion of Setting Out
3. Form D - Notice of Completion of Foundations

A separate notification, inspection and acceptance procedure for drainage works is required, depending on whether such By-laws apply in the locality. In addition, contractors undertaking the drainage construction works shall be registered with the Construction Industry Development Board (CIDB).

6.2.5 Completion of Works and Handing Over

Drainage works on completion shall be handed over to the respective authorities. Major facilities, such as trunk drains with reserve equal to or exceeding 6 m, shall be handed over to the DID. Minor facilities shall be handed over to the Local Authority. Roadside drains measuring more than 1.2m wide under the JKR and LLN jurisdiction, shall normally be handed over to the Local Authority, or DID.

6.2.6 Works Related to Utility/Services

Individual local agencies tend to carry out their daily chores of utility/service works departmentally. Complications often arise at a particular site, such as a street or a river crossing, involving decisions from different agencies. In such a situation, a joint consultation shall be required between the agencies involved to sort out any complications that might be present at the site. There is a general understanding between the agencies on the need for a joint consultation, but there is no statutory provision for the requirement.

Cases of utility/services such as follows often call for a joint consultation:

1. Drains and sewer pipe crossing
2. Drains and water pipe crossing
3. Drains and electrical cable crossing
4. Drains and communication cable crossing
5. Drains and road crossing
6. Drains and railway crossing
7. Drains joining to trunk drains and rivers

Mandatory compliance with the respective authorities shall be required for the following services:

1. Work involving land acquisition - Land Office
2. Request for electricity supply - TNB
3. Work involving construction and/or renovation of building - Local Authority

4. Installation of cranes/lifts - Factory and Machinery Dept

There are several guidelines already established for plan submission for construction works. Typical examples of such guidelines are as shown in Table 6.1.

Most guidelines would require revision, particularly on technical matter in order to be compatible with the Urban Stormwater Management Manual.

6.2.7 Operations and Maintenance (O & M)

The O&M of stormwater facilities is normally carried out by the Local Authority. Any facilities that are not under the Authority control shall be operated and maintained by the user/land owner. Sometimes, the management of the facilities is given to service providers. There appears to be no standard guideline yet pertaining to the O&M of stormwater facilities. The responsible agencies generally will find ways and means to cope up with their O&M responsibility to ensure health, welfare and safety of the public, although sometimes under budget constraints.

Table 6.1 Sectoral Agency Guidelines

Authority	Guidelines
Federal/State JKR	1. Guidelines for Submission of Layout Plans, and Road and Drainage Plans 2. A Guide to Drainage Design of Roads
KTM	Permanent Way Manual
DID	1. Urban Stormwater Management Manual 2. Processing Procedure for Construction of Bridges/Pipes Crossing Rivers

6.2.8 Requirements of Department of Environment

Drainage works, categorised as "prescribed activities" under the EQA, 1974, shall be subject to EIA and Environmental Management Plan (EMP) requirements. The prescribed drainage activities are as follows:

1. Drainage of wetland, wildlife habitat or of virgin forest covering an area of 100 ha or more
2. Construction of dams and manmade lakes and artificial enlargement of lakes with surface area of 200 ha or more.

In addition, the "prescribed activities" list also covers other activities where drainage will most likely play a part, although probably on a minor scale. Appendix 6.A shows a full listing of these activities.

There are several guidelines prepared by the DOE to facilitate project proponents in complying with the EIA/EMP requirements. An example is the EIA guidelines for drainage and/or irrigation projects.

6.3 DOCUMENTATION

Comprehensive documentation of stormwater facilities is useful for the management of such facilities. All information about the project shall be documented. It shall cover project inception, planning, detailed design, construction, commissioning and handing over, O&M, repairs, upgrading, and performance.

The documents shall provide the responsible agency/owner the necessary information for their database. Copies of documentation shall be kept with the builder, operator, engineer, or consultant responsible for the works (see Table 6.2).

Documents shall be stored as hard copy, microfilm, or electronic copy, depending on the needs of the user. Document database shall facilitate retrieval of data using systematic filing/placement and indexing records. The documentation system shall adhere to the internationally recognised ISO 9000 certification.

Table 6.2 Responsibility of Document Keeping

Keeping Personnel	Document					
	Drawings	Design Report	Construction Record	O & M Manual	Maintenance Record	Performance Record
Designer	•	•	•	•		
Owner	•	•	•	•	•	•
Builder	•		•			
Operator	•			•	•	•

6.3.1 Drawings

Submission drawings for the building/construction approval shall contain the blueprint of the intended facilities. Particulars such as the following shall be clearly shown in the drawings: location plan, layout plans, setting out details, longitudinal sections and cross-sections and other

details covering the foundation and structural aspects and services that may be affected.

As-built drawings shall be prepared for maintenance purposes and shall contain the exact details of facilities as they have been actually constructed.

6.3.2 Design Reports

Design reports shall be prepared and shall include a project brief, site and soil investigation, design concepts, detailed engineering calculations and project specifications.

Design reports shall be endorsed by a Professional Engineer responsible for the project.

6.3.3 Construction Records

Detailed records of contractor, particulars of contract, supervisors, activities carried out, test reports, site problems encountered, instructions to contractors, etc are important documents that must be preserved. Photographs and/or video images taken regularly during construction period shall also be included.

6.3.4 Operation & Maintenance Manual

Each completed facility shall be accompanied by its O&M manual. Detailed particulars to be shown in the manual shall include manpower and equipment/tools requirements, O&M procedure, maintenance activities and schedules, and inspection programs etc. High-risk projects shall need an Emergency Action Plan (EAP).

6.3.5 Maintenance, Repair and Upgrading Records

Stormwater facilities will deteriorate over time with wear and tear and aging of the material components. Regular maintenance and repairs shall be required for these facilities to perform optimally as designed. After a time period, these facilities shall require upgrading to meet current needs. Records of maintenance, repair and upgrading of the facilities shall be kept to facilitate a monitoring process of performance and management of these assets.

6.3.6 Performance Record

Stormwater facilities are designed and constructed to meet certain acceptance performance criteria and their performance shall be ascertained and recorded over specified time intervals. Performance records shall guide the owner/user to the needs of facility upgrading and regulatory O&M measures. The records shall include complaints received, data on flash floods, pollution, damages, etc.

6.4 SUBMITTAL REQUIREMENTS

This section highlights the conditions and requirements a project proponent must fulfil upon submission, apart from the general requirements already established by Local Authority. This is to ensure the objectives of the Manual are met.

6.4.1 Submission for Land Subdivision

When submitting for subdivision of a land for some project development, the project proponent shall indicate, on submitted layout plans, the following:

1. Contours indicating the original topography of project site and its surrounding area with details of existing ponds, wetlands, streams, flood data, catchments.
2. Landuse in proposed site and also landuse in the surrounding area indicating possible runoff contributing to the proposed site.
3. Soil bore-hole logs and cross-sections to show subsurface soil characteristics.
4. Location of existing river/drains intended to receive stormwater resulting from the project development.
5. Land reserve for stormwater facilities (conveyance and source control).
6. Preliminary layout indicating location and overland flow path of the proposed drainage system (The layout shall include location and sizes of retention/detention facilities and water quality control facilities).
7. Preliminary design calculations for the proposed sizing of land required for the stormwater management system (Calculations shall also show existing catchment flow condition and evidence that such condition will not burden the carrying capacity of downstream rivers from the proposed development).

6.4.2 Submission for Building Plan Approval

Submittal requirements as stated in section 6.3.2 for land subdivision shall be resubmitted for Building Plan Approval, plus additional details sufficient for construction to be carried out such as follows:

1. Layout plans must be accompanied with setting out details showing precise location of the complete stormwater management system proposed.
2. Drawings of conveyance facilities shall show the longitudinal sections and cross-sections with indication of peak discharge water levels for the designated return periods.
3. Detention/retention and water quality control facilities shall be detailed out in plans and cross-sections. Additional details shall be included to show inlet/outlet systems and other pertinent components.

4. Detailed calculations shall be submitted to show peak discharge and pollution reduction are under control.
5. For infiltration control, soil investigation bore-logs (showing ground water tables) shall be submitted together with laboratory soil permeability test results.
6. Design calculations and drawings shall generally follow the format as established in the SWM Manual.
7. Erosion and sedimentation control plan shall also be submitted (see details in Chapter 41 of this Manual).

APPENDIX 6.A LIST OF PRESCRIBED ACTIVITIES

1. AGRICULTURE:

(a) Land development schemes covering an area of 500 has or more to bring forest land into agricultural production.

(b) Agricultural programmes necessitating the resettlement of 100 families or more

(c) Development of agricultural estates covering an area of 500 ha or more involving changes in types of agricultural use.

2. AIRPORT:

(a) Construction of airports (having an airstrip of 2,500 metres or longer)

(b) Airstrip development in state and national parks.

3. DRAINAGE AND IRRIGATION:

(a) Construction of dams and man-made lakes and artificial enlargement of lakes with surface areas of 200 ha or more.

(b) Drainage of wetland, wildlife habitat or of Virgin forest covering an area of 100 ha or more.

(c) Irrigation schemes covering an area of 5,000 ha or more.

4. LAND RECLAMATION:

Coastal reclamation involving an area of 50 ha or more.

5. FISHERIES:

(a) Construction of fishing harbours.

(b) Harbour expansion involving an increase of 50 percent or more in fish landing capacity per annum.

(c) Land based aquaculture projects accompanied by clearing of mangrove swamp forests covering an area of 50 ha or more.

6. FORESTRY:

(a) Conversion of hill forest land to other landuse covering an area of 50 ha or more.

(b) Logging or conversion of forest land to other landuse within the catchment area of reservoirs used for municipal water supply, irrigation or hydro-power generation or in areas adjacent to state and national parks and marine parks.

(c) Logging covering an area of 500 ha or more

(d) Conversion of mangrove swamps for industrial, housing or agricultural use covering an area of 50 ha or more.

(e) Clearing of mangrove swamps on islands adjacent to national marine parks.

7. HOUSING:

Housing development covering an area of 50 ha or more.

8. INDUSTRY:

(a) Chemical - Where production capacity of each product or of combined products is greater than 100 tonnes/day

(b) Petrochemicals - All sizes.

(c) Non-ferrous - Primary smelting:
Aluminium - all sizes
Copper - all sizes.
Others - producing 50 tonnes/day and above of products.

(d) non-metallic - Cement - for clinker throughput of 30 tonnes/hour and above.
- Lime - 100 tonnes/ day and above burnt lime rotary kiln or 50 tonnes/day and above vertical kiln.

(e) Iron and steel - Require in iron ore as raw

(f) Construction of national highways

(g) Construction of new townships.

9. INFRASTRUCTURE

(a) Construction of hospitals with outfall into beachfronts used for recreational purposes.

(b) Industrial estate development for medium and heavy industries covering an area of 50 ha or more.

(c) Construction of expressways.

(d) Construction of national highways

(e) Construction of new townships

Extracted from the Environmental Quality (Prescribed Activities), Environmental Impact Assessment Order, 1987.

10. PORTS:

(a) Construction of ports
(b) Port expansion involving an increase of 50 percent or more in handling capacity per annum.

11. MINING:

(a) Mining of minerals in new areas where the mining lease covers a total area in excess of 250 ha.
(b) Ore processing, including concentrating for aluminium, copper, gold or tantalum.
(c) Sand dredging involving an area of 50 ha or more.

12. PETROLEUM:

(a) Oil and gas fields development.
(b) Construction of off-shore and on-shore pipelines in excess of 50 kilometres in length.
(c) Construction of oil and gas separation, processing, handling and storage facilities.
(d) Construction of oil refineries.
(e) Construction of product depots for the storage of petrol, gas or diesel (excluding service stations) which are located within 3 kilometres of any commercial, industrial or residential areas and which have a combined storage capacity of 60,000 barrels or more.

13. POWER GENERATION AND TRANSMISSION:

(a) Construction of steam generated power stations burning fossil fuels and having a capacity of more than 10 megawatts.
(b) Dams and hydroelectric power schemes with either or both of the following:
  (i) dams over 15 metres high and ancillary structures covering a total area in excess of 40 ha.
  (ii) reservoirs with a surface area in excess of 400 ha.
(c) Construction of combined cycle power stations.
(d) Construction of nuclear-fuelled power stations.

14. QUARRIES:

Proposed quarrying of aggregate, limestone, silica, quartzite, sandstone, marble and decorative building stone within 3 kilometres of any existing residential, commercial or industrial areas, or any area for which a license, permit or approval has been granted for residential, commercial or industrial development.

15. RAILWAYS:

(a) Construction of new routes.
(b) Construction of branch lines.

16. TRANSPORTATION:

Construction of Mass Rapid Transport projects.

17. RESORT AND RECREATIONAL DEVELOPMENT:

(a) Construction of coastal resort facilities or hotels with more than 80 rooms.
(b) Hill station resort or hotel development covering an area of 50 ha or more.
(c) Development of tourist or recreational facilities in national parks.
(d) Development of tourist or recreational facilities on islands in surrounding waters, which are gazetted as national marine parks.

18. WASTE TREATMENT AND DISPOSAL

(a) Toxic and Hazardous Waste -
  (i) Construction of incineration plant
  (ii) Construction of recovery plant (off-site).
  (iii) Construction of wastewater treatment plant (off-site)
(b) Municipal Solid Waste -
  (i) Construction of incineration plant.
  (ii) Construction of composting plant
  (iii) Construction of recovery/recycling plant.
  (iv) Construction of municipal solid waste landfill facility
(c) Municipal Sewage -
  (i) Construction of wastewater treatment plant
  (ii) Construction of marine outfall.

19. WATER SUPPLY:

(a) Construction of dams or impounding reservoirs with a Surface area of 200 ha or more.
(b) Groundwater development for industrial, agricultural or urban water supply of greater than 4,500 cubic metres per day.

Extracted from the Environmental Quality (Prescribed Activities), Environmental Impact Assessment Order, 1987.