

## FIELD DEPLOYMENTS & STRUCTURES

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School of Environment research and teaching activities often employ the use of instrumentation that is mounted or deployed upon some form of supporting structure or framework.

There are numerous health and safety considerations that must be assessed before a structure or instrumentation is deployed in the field. The safety of all people directly involved (e.g., staff and students) as well as those potentially affected (i.e., general public) must be considered carefully.

### Consideration of Direct Effects

- Can the act of deployment (and subsequent dismantling) be performed safely?
  - Wear appropriate safety gear (e.g., hard hats, gloves, steel capped boots etc.)
  - Ensure adequate numbers of people are available to help
  - Watch out for power lines
- Are conditions safe enough for the deployment (e.g. weather, swell)?
- Does the deployment obstruct or have the potential to obstruct an access way or public area? (e.g., waterway, road, surf zone, facility)
- Does the presence or any part of a deployment pose a potential hazard to any person or property?
- Does the deployment pose a hazard to those who may tamper with it?

### Consideration of Indirect Effects

- What are the possible outcomes if the deployment fails or cannot be retrieved? (e.g., if a mast topples will it damage private property or become entangled in power lines? If a marine deployment is lost or buried could it become a navigation hazard?).
- Will the presence of the deployment affect the ambient conditions of the environment such that a potential hazard is created (e.g., if a structure affects water flow, will it cause abnormal erosion or sedimentation?).

### Keep all relevant parties informed

It is the duty of those involved in the deployment to inform relevant parties (whether they be landowners, neighbouring residents, local iwi or the general public) of any hazard that a deployment may pose or has created. This may be achieved through public notifications in local newspapers, public meetings, erection of signage, or contacting people directly.

### Be visible if necessary

Similarly, measures must be taken to highlight the presence of a deployment where its presence may be considered to be a hazardous obstruction. This may be achieved through use of fluorescent flagging, colourful signage, buoys, night lighting or strobes, or simply a sturdy barricade or fence. Special consideration must be given to the safety of a deployment at night.

In some cases, it is prudent to conceal equipment from likely vandalism or theft, however, equipment must not be hidden or concealed at the expense of Health and Safety considerations.

## Public Relations

As a matter of course, the relevant Regional and Local Authority should be consulted before erecting structures or deploying instrumentation on non-University sites. For instance, the School has an agreement to notify the ARC of all intended deployments of coastal equipment. Non-approved deployments in certain locations may result in prosecution.

Likewise, permission must be sought for use of private land from the relevant landowner/ manager/ occupier before undertaking such work.

## Environmental considerations

The environmental effects associated with the erection of a structure for monitoring or sampling should be assessed and discussed with the relevant Regional Authority before construction. Factors usually considered are;

- the impact of the physical presence of the structure on natural physical and ecological processes, tangata whenua, and public access,
- the impact of the activity (e.g., noise, visual impact) on natural ecological processes, tangata whenua, local residents.

Effects on agricultural and horticultural activities should be discussed with the respective land owners.

## Equipment Considerations

For a deployment to be successful, it must be

- **secure** - fixed instrumentation and structures must be adequately secured or anchored such that they will not fail, be damaged or lost as a result of reasonably expected conditions.
- **locatable** - the deployment must be able to be located (through use of a “pinger”, buoyage, tether, flags, etc.) especially when using expensive equipment or mobile remote equipment.
- **retrievable** - plan for the retrieval as much as for the original deployment.
- **labelled** - a return address or at least owner’s name must be attached or engraved onto the deployment in case of loss or theft.

## Insurance

The user or technical staff must notify the Insurance agent of the details of the intended use of equipment deployments worth (in total) \$250,000 or more. It is recommended that similar notification be given for any equipment that is to be taken overseas.

## Discouraging vandalism

The possibility of vandalism to deployed equipment must be considered especially where the site is open to public access. Damage may range from accidental damage to intentional vandalism and theft. The best defences against vandalism are inconspicuous or camouflaged/hidden equipment, equipment made inaccessible or within secured properties.

## References

“The Erection of Sculpture and Displays” - Health & Safety Manual 1999, University of Auckland.