

# PLAYLINK

## Two examples of design risk-benefit assessment on PLAYLINK schemes

1. Flexible Bridge over water at Westwood Recreation Ground, London Borough of Redbridge.

2. Tree swing at Warrior Close, Brighton & Hove City Council.

### Introduction

Over the next few weeks and months we hope to share a number of design risk-benefit assessments that we have undertaken on PLAYLINK designs and which we then see the schemes through to realisation. Future assessments will cover work in a number of areas including, parks, schools, housing estates, play areas, general public realm.

The design risk-benefit assessments are passed to our clients who should use them to inform their own assessment of the risks and benefits of our schemes. The assessments aim to inform, but not bind, our client's own thinking and judgment.

We also support providers and designers generally in understanding both the principles and the practice of [risk-benefit assessment](#).

Before sharing the two assessments below, the following remarks may be of interest.

### Our experience

We are more than ever convinced that the 'narrative' form of describing both risk and benefits has two advantages:

- it forces us to think carefully about our own reasoning and shines a light on our own slips in thinking, for example, when we drift into considerations of secondary risk management – i.e. worrying about our own position – and losing focus on the primary purpose of the process: making judgments about what in our view is best for children and teenagers

- by recording the considerations we take into account, followed by a judgment, we believe we are going at least some way to demonstrating 'reasonableness'.

### **Secondary risk management**

There is nothing inherently wrong in assessing risks to the provider (or in our case the designers). That process, however, is distinct and different from that of making a risk-benefit assessment about what is good for children and teenagers.

In fact, we would argue that providers (and designers) should explicitly undertake risk-benefit assessment of their own position in the light of their (we hope) best judgment about what is good for children and teenagers (which will, we think, include the possibility of allowing for injury). The reasons for this, at least from PLAYLINK's perspective, is that it could - no, should – lead to providers developing strategies that will help develop a public understanding of play in general and risk-taking in play in particular. For example, play areas could have signs saying that 'this is a risky place – and good for children and teenagers'. It should also encourage play providers to agree a [play policy](#) with an explicit section on the benefits of risk in play, and risk-benefit assessment. Both [Managing Risk in Play Provision: implementation guide](#), and [Counsel Opinion](#), support this view.

**NOTE:** For the full risk-benefit form with introductory information click [here](#).

### **Key distinctions**

This risk-benefit assessment template is formatted to take account of a key distinction made in the HSE-endorsed 'Managing Risk in Play Provision: implementation guide'. That distinction is between:

- technical inspections;
- and value-based risk-benefit assessment.

**Flexible Bridge over water at Westwood Recreation Ground**  
**London Borough of Redbridge**

Tick as appropriate

Design risk-benefit assessment

Provider risk-benefit assessment

Monitoring risk-benefit assessment

Undertaken by.....**PLAYLINK (BS, PD, JL)**..... Date.....**19.01.10**.....

The image below shows the specified bridge.

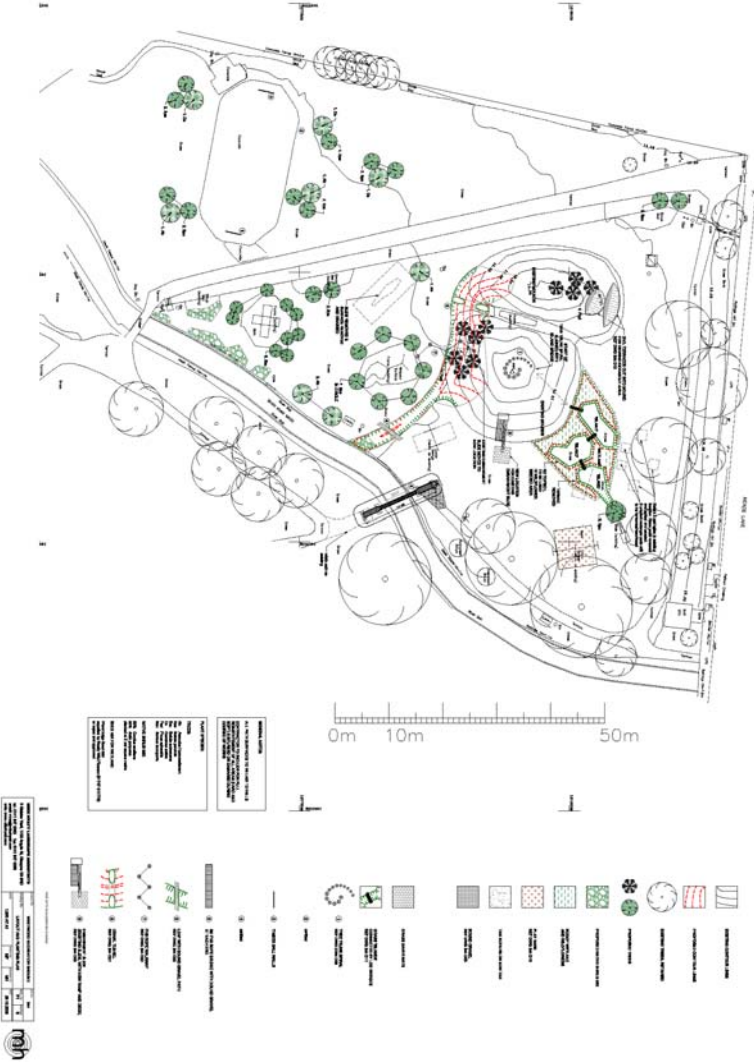
	Geländesituation beachten	<b>Hängebrücke m. Ketten- u. Wackelstegen</b> ●	906192200 K	906192200 L	906192200 R	906192200 S
		<b>Hängebrücke mit Stegen</b>				
🔒	EN 1176					
K	Ausführungsvarianten					
L	Nadelholz: Fichte / Kiefer, kdi-grün auf fvz. Stahlfüßen					
R	Nadelholz: Lärche / Douglasie, lasiert auf fvz. Stahlfüßen					
S	Robinie / Eiche, lasiert					
	Stahlpfosten fvz., Holzteile Eiche	<u>Bauteile:</u> 1 Hängebrückenbelag mit Geländerketten 2 Stege mit Handlauf 2 Endgestelle 4 Standpfosten				
		<b>Hängebrücke mit Stegen</b> ●			906192300 R	906192300 S
		▶ technische Änderungen vorbehalten	▶ regelmäßige Kontrollen		7,532	7,821
					8,096.90	8,407.58
					Klettergeräte 6-67	

The image below shows a similar bridge from a different product range with the same benefits/hazards as associated with the bridge specified for Westwood Recreation Ground. This is the bridge at the Playmobile Park in Nuremburg.



**Examples  
for Crossings**

This drawing shows the location of the proposed bridge at item 5.



**Technical information**

Type of specialism / knowledge required?	Is this required? Yes/No	Organisation/ individual conducting assessment	Comment
Common sense/qualified by experience: <b>Play Consultant</b>	Yes	<b>PLAYLINK (BS, PD, JL)</b>	<b>Required to make judgements of overall risk/benefit of proposed flexible bridge</b>
Engineer	No		<b>The bridge is a standard product that has had its structural integrity and fixing methods checked (see below)</b>
Other Equipment supplier ( <b>Jupiter/FHS range</b> )	Yes		<b>The product code is 906192300 R</b>

Note: any reports should be appended to this form or filed with it.

**Value-based, risk-benefit assessment**

Benefits	Comments
<p><b>Examples only:</b></p> <p>Pleasure</p> <p>Development of self-confidence and well-being</p> <p>Engagement with natural environment and natural elements</p> <p>Learning through experience: accidents from which one might learn</p> <p>Mixing between different age ranges</p>	<p>The wobbly, flexible nature of the bridge allows children to experience the fun and challenge of movement.</p> <p>The nervousness caused by this uncertainty is part of the experience and invites children to consider and test their physical skills to negotiate a passage over the water to the other side.</p> <p>The bridge provides an opportunity for children to exercise caution and develop their own abilities to assess risk.</p> <p>There is considerable opportunity for children to experience challenge which will vary according to the number of people on the bridge at any one time.</p> <p>The bridge is a playful link to further play opportunities on the other side.</p> <p>A bridge provides good opportunity for imaginative play.</p> <p>In contrast to the other existing bridge, this bridge brings children into a different relationship with space and the natural environment.</p>

## Risks

	Risks
<p><b>Examples only:</b></p> <p>Risk of minor injuries and long bone fractures</p> <p>Risk of more serious injuries</p> <p>Risk of damage to trees, other features or equipment</p>	<p>Falling onto a hard surface/edge from max height 585mm. There is a small risk of children falling and a lower risk of serious injury.</p> <p>Falling onto stones/hard surface in the river bed approx 1,385mm. As above.</p> <p>Falling off bridge. Low likelihood of serious injury.</p> <p>Jumping off bridge. Low likelihood of serious injury.</p> <p>Risk of being washed downstream/drowning. Very limited risk.</p>

**NB note this needs to be monitored over time to assess in practice risk levels**

Relevant local factors	Comments
<p><b>Examples only:</b></p> <p>Feature, equipment, site in proximity to housing</p> <p>Knowledge of children creating own rope swing</p> <p>Concerns about teenagers activities/behaviour</p> <p>Concern at lack of activities/places for teenagers</p>	<p>The location of the bridge is in a popular park that is widely used and near to amenities</p> <p>There are rats at this location but there is little/no additional risk of catching leptospirosis than currently exists. NB this play area has been used for over 20 years with no known incidence of the disease.</p> <p>Younger children are generally accompanied by adults</p> <p>The maximum fall heights from the bridge are 585mm at the river edge and 1,385mm to the river bed</p>

Additional Options	Comments (Pros and cons)
<p><b>Examples only:</b></p> <p>Allow/facilitate activity</p> <p>Curtail or limit activity</p> <p>Take measures to counter local anxieties about teenagers</p> <p>Limit or curtail play opportunities in order to allay local adult concerns/Facilitate local play opportunities and counter adult anxieties</p> <p>Ensure signage at play area makes positive statement about risk-taking</p>	<p>The bridge could be replaced with a rigid timber bridge. (There would be a large reduction in the play benefits described at page 10. There would be additional potential hazard of children using the rigid structure for balancing on or jumping from the handrail.)</p> <p>Flexible bridge with additional rope mesh panels. (This would reduce the risk of accidental falling through the sides of bridge. However it could increase the risk of instability leading to falling if horizontals in the side panels allow children to gain higher footholds. There would be a loss of the signals towards cautionary behaviour requiring children to think and appreciate changes in their physical environment.)</p> <p>Partial infill of side panels at culvert edges only i.e. first 1.5m of bridge at each end. (This would potentially reduce the risk of falling onto the hard culvert edge but also reduce the opportunity for children to negotiate that challenge. However given that children may use the outside of the bridge for crossing, the mesh infill may make it less easy to recover)</p> <p>Create softer culvert edges e.g. through use of tyres or wetpour. (There would be a loss of the signals towards cautionary behaviour requiring children to think and appreciate changes in their physical environment. Any possible reduction in risk would be very low)</p> <p>Monitor river bed over time and remove rocks if a source of concern</p> <p>No bridge. (This would provide no play opportunities or any of the associated play benefits described at page 10.)</p>

Precedents/comparisons if appropriate	Comments
<p><b>Examples only:</b></p> <p>Other providers/agencies have features attached to trees</p> <p>Examples of providers using non-EN Standard equipment</p> <p>Use of Standards/tests other than EN Standards</p> <p>Examples of, for example, arboriculturist assessing strength and health of trees</p>	<p>There is a much larger bridge of this nature with the same hazards at Nuremburg Play Mobile park in Germany (see photo)</p> <p>There is growing awareness of the importance of knobby and uneven surfaces for children to experience and learn how to negotiate – see writings by landscape architect Helle Nebulong, and the Play England guidance Managing Risk for Play Providers.</p> <p>There is a flexible bridge across water with replicable hazards at the Sherwood Centreparc site, Nottingham</p>

Risk-benefit judgment of suitability of flexible bridge with no additional measures	Comments
Proceed.	The risk of serious injury or death is low and is outweighed by the benefits as outlined above.

**Tree swing at Warrior Close, Brighton**

Tick as appropriate

Design risk-benefit assessment

Provider risk-benefit assessment

Monitoring risk-benefit assessment

Undertaken by.....PLAYLINK

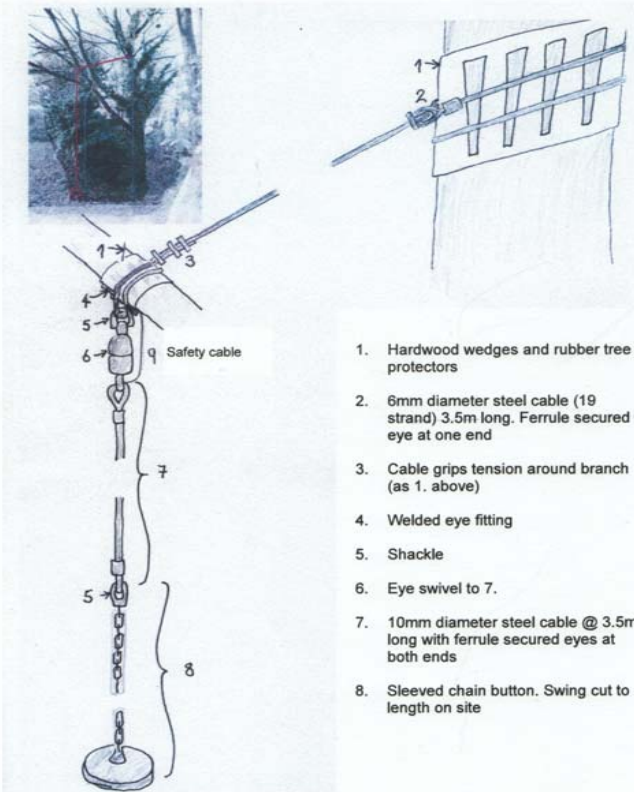
Date.....2.02.2010.....

**Technical information**

Type of specialism / knowledge required?	Is this required? Yes/No	Organisation/ individual conducting assessment	<u>Assessment</u> 1. Acceptable/No action required 2. Remedial action required 3. Not usable	<u>Remedial action proposed, if any</u>
Common sense/qualified by experience	Yes/No  YES	PLAYLINK BS/JL Tel: 0207 7202452	2. Remedial action required	More free space to be created around rope swing by relocating slide to different position More free space and removal of hazards within area by felling adjacent tree stump.
Arboriculturist	Yes/No  YES	T. LADDIMMAN Chartered Arbiculturist, Broad Oak Tree	1. Acceptable/No action required	Considered fit for purpose by T Laddimman  Opinion offered as to the type of fixing to

		Consultants LTD, Tel: 01435 862444		be used as best for this particular tree. (See attached drawing)
Swing specialist	Yes/No  YES	I. MacIntyre/ J.O'Driscoll Senior Adventure Playground designers/build ers Tel: 07724142302	2. Remedial action required	<ul style="list-style-type: none"> <li>• Removal of slide within swinging zone</li> <li>• Removal of tree stump within swinging zone</li> <li>• Removal of some branches as per arboriculturist's report</li> </ul>

Drawing: Tree swing specification  
Project: Warrior Close  
Client: PLAYLINK  
Date: 12.12.09



1. Hardwood wedges and rubber tree protectors
2. 6mm diameter steel cable (19 strand) 3.5m long. Ferrule secured eye at one end
3. Cable grips tension around branch (as 1. above)
4. Welded eye fitting
5. Shackle
6. Eye swivel to 7.
7. 10mm diameter steel cable @ 3.5m long with ferrule secured eyes at both ends
8. Sleeved chain button. Swing cut to length on site

**Value-based, risk-benefit assessment**

Benefits	Comments
<p><b>Examples only:</b></p> <p><i>Pleasure</i></p> <p><i>Development of self-confidence and well-being</i></p> <p><i>Engagement with natural environment and natural elements</i></p> <p><i>Learning through experience: accidents from which one might learn</i></p> <p><i>Mixing between different age ranges</i></p>	<ul style="list-style-type: none"> <li>• Pleasure and fun</li> <li>• Physical play and reflective opportunities</li> <li>• Maximised rotational possibilities and therefore good potential for some unpredictability and therefore challenge</li> <li>• Development of self-confidence and well-being</li> <li>• Engagement with natural environment and natural elements</li> <li>• Potential for incorporation into imaginative games where woodlands are the play context eg. tarzan swinging in the trees</li> <li>• Learning through experience: accidents from which one might learn</li> <li>• Mixing between different age ranges.</li> </ul>

Risks	Comments
<p><b>Examples only:</b></p> <ul style="list-style-type: none"> <li>- Risk of more serious injuries</li> <li>- Risk of minor injuries and long bone fractures</li> <li>- Risk of damage to trees, other features or equipment</li> </ul>	<p><b>EQUIPMENT FAILURE:</b></p> <p><u>Swing fitting fails due to wear</u> Wear should be detectable through regular internal inspection as per proposed maintenance schedule attached</p> <p><u>Swing fitting fails due to vandalism.</u> This is the same as for a standard swing. The swing has a strong steel chain, cable and fitting which would require concerted effort with a hacksaw to cut.</p> <p><b>PART OF TREE BREAKS:</b></p> <p><u>The branch or support could collapse</u> There is some risk of minor injuries eg bruises, scrapes and possible long bone fractures. These would largely be incurred by falling from the swing onto the ground. A pendulum seat will be used which will deter multiple users from using the swing simultaneously thus reducing unpredictability. The tree has been checked by an arboriculturist and considered fit for purpose (see technical assessment). All fittings between the 2 shackles (No. 5 on specification drawing) will carry certification for Safe Working Loads.</p> <p><u>The tree/branch could become damaged with wear.</u> There is rubber protector mat between all points of wear and the tree. The design of the fixing (see specification drawing) will minimise wear on the tree. The fixing is designed with an additional bracing to the tree crown providing a secondary bearing in the unlikely event of the branch giving way</p> <p><b>OTHER FALLS OR COLLISIONS</b></p> <p><u>One could fall onto something hard.</u> The current surface is patchy grass and leaf litter. There are no protruding tree roots or stones. It is very unlikely that the fall height exceeds 1.4m</p>

	<p><u>Collision with obstacles</u> The adjacent tree stump should be felled and the nearby slide relocated off another platform.</p> <p><u>Risk of crashing into the tree or support</u> It may be possible to hit the supporting tree but this is easily seen and will likely be used for pushing against with feet.</p> <p>Collision with other person There are no obstructions to the visibility of swing users and other users</p> <p><b>OTHER RISKS:</b></p> <p><u>Risk of hanging</u> There is very little risk from hanging as the swing is suspended on sleeved chain and therefore very difficult to knot or loop.</p>
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Relevant local factors	Comments
<p><b>Examples only:</b></p> <p><i>Feature, equipment, site in proximity to housing</i></p> <p><i>Knowledge of children creating own rope swing</i></p> <p><i>Concerns about teenagers activities/behaviour</i></p> <p><i>Concern at lack of activities/places for teenagers</i></p>	<ul style="list-style-type: none"> <li>• Mature woodland setting with implicit adventurous play eg tree climbing</li> <li>• Evidence of persistent self-build rope swings on tree that is now too weak to support it.</li> <li>• Existing swings have a limited challenge and are suspended from a relatively low frame.</li> <li>• Only a small budget exists for increasing the play offer at this site.</li> <li>• There is a need for more challenging opportunities on this site</li> <li>• More play offers in this lower section of the space will invite greater use and help this area not to become a ghetto</li> <li>• Local housing and road nearby to call for help</li> </ul>

Options	Comments (Pros and cons)
<p><b>Examples only:</b></p> <p><i>Allow/facilitate activity</i></p> <p><i>Curtail or limit activity</i></p> <p><i>Take measures to counter local anxieties about teenagers</i></p> <p><i>Limit or curtail play opportunities in order to allay local adult concerns/Facilitate local play opportunities and counter adult anxieties</i></p> <p><i>Ensure signage at play area makes positive statement about risk-taking</i></p>	<ul style="list-style-type: none"> <li>• Removal of surrounding objects in “safety zone” (will reduce the risk of hitting either or for children being unaware of each other with the use of the slide. This however will have a cost against it)</li> <li>• Increase the impact absorbency in the fall zone which may reduce risk of injury. Note, however, wide general prevalence of children and teenagers creating own rope swings and generally low risk of this activity. (Excavation and loose fill is not possible in a root zone without damaging the tree or changing the level which would then need to be retained. Saver grass mats would be very expensive and grass is unlikely to grow through. Rubber matting would also decrease the charm of the woodland context.)</li> <li>• Concern that any attempt at adding an impact absorbent surface will: <ul style="list-style-type: none"> <li>(1) not work in practice and</li> <li>(2) have potential negative affect of suggesting ground is ‘safe’ to fall on leading to increase in risk-taking behaviours in compensation for perceived (though by no means assured) risk-reducing qualities of IAS; that a ‘false’ message will be given to users about the risks associated with rope swings generally leaving them to make individual false risk assessments when they create rope swing opportunities for themselves (as we know they do) here or in other locations</li> </ul> </li> <li>• Monitor use and wear as per proposed maintenance schedule. This will provide relevant feedback for further management.</li> </ul>

Precedents/comparisons if appropriate	Comments
<p><b>Examples only:</b></p> <p><i>Other providers/agencies have features attached to trees</i></p> <p><i>Examples of providers using non-EN Standard equipment</i></p> <p><i>Use of Standards/tests other than EN Standards</i></p> <p><i>Examples of, for example, arboriculturist assessing strength and health of trees</i></p>	<ul style="list-style-type: none"> <li>• Many examples, recorded and in our own experience, of children and teenagers creating rope swings attached to trees in unsupervised settings with little risk of significant injury.</li> <li>• Forestry Commission guidance on “Rope swings, dens, treehouses and fires”</li> <li>• Scouting Movement</li> <li>• Go Ape facilities where risk, adventure and taking responsibility for oneself are core to the experience</li> </ul>

Risk-benefit judgment (design stage)	Comments
<p>The design of the tree swing is appropriate for this particular tree and particular location.</p> <p>There is not considered to be sufficient need to install additional impact absorbent surfacing.</p> <p>The factors related in the comments section (right) have an integral bearing on this decision.</p>	<p>The fixing and supporting chain are designed to have a tested load bearing capacity and to greatly exceed a load of possible users.</p> <p>The adjacent tree stump and slide should be removed</p> <p>The swing and fixings should be “inspected” for the usual signs of wear as per proposed maintenance schedule after first month and second month and thereafter adjusted in light of experience)</p> <p>The tree should be inspected for damage by an arboriculturist annually and thereafter adjusted in light of experience</p> <p>If an external inspection is required for the swing fixings, and as this is anon-standard item, this should be provided by a suitably experienced person and not inspected by someone whose main or only knowledge is of EN standards.</p> <p>This document is a risk-benefit assessment at the design stage. It is possible that further issues come to light through the implementation of this feature and adjustments may be required. In addition it is recommended that a post-installation risk-benefit assessment is undertaken by the client.</p>

**Proposed Tree Swing Maintenance and Inspection Schedule**

<b>Item</b>	<b>Feature</b>	<b>Task</b>	<b>Every 2 weeks</b>	<b>Monthly</b>	<b>Ever 3 months</b>	<b>Annually</b>
<b>1</b>	Supporting tree	Specialist arboricultural inspection of health and wear on tree	Overall visual inspection as to the state	Overall inspection including inspection & reporting or any wear to tree	close inspection including inspection & reporting or any wear to tree	arboricultural inspection & report on state of tree
<b>2</b>	Pendulum seat	<b>Internal observation</b>				
<b>3</b>	Pendulum seat	<b>External inspection</b> Overall visual inspection as to the state – potential problems will be visible EXCEPT most wear will occur at the points of most metal to metal movement; in this case where last ( ground end ) link connects with the rubber seat securing fitting. Close inspection is required here. Replacement of any fitting where more that 1/3 <sup>rd</sup> has worn away (all fitting designed to be fit for purpose even if worn more than 1/3 <sup>rd</sup> through. )	Overall visual inspection as to the state	close inspection including inspection & reporting or any wear		

4	Fixings	As above With most wear occurring at where shackles (5) meet chain / cable And Ferrell secured eye (2)	Overall visual inspection as to the state	close inspection including inspection & reporting or any wear		
5	Ground	Inspection of ground	Overall visual inspection as to the state	close inspection including inspection & reporting or any wear		
6	<b>Overall</b>	<b>Inspection of swing and its use</b>	Overall visual inspection as to the state	close inspection including inspection & reporting or any wear		