

AGENDA ITEM No. **3** .....

NORTH LANARKSHIRE COUNCIL

REPORT

To: JOINT CONSULTATIVE COMMITTEE (MANUAL AND CRAFT)		Subject: LADDER SAFETY DURING PAINTING OPERATIONS – CONSTRUCTION SERVICES
From: HEAD OF PERSONNEL SERVICES		
Date: 31 JANUARY 2000	Ref: IW/TY/JAW	

**1. BACKGROUND**

- 1.1 At the J.C.C. (Manual and Craft) Meeting of 3 December 1999 the Trade Union side raised the issue of securing ladders during painting operations. The method previously used in some areas of the Council was by means of strapping the ladder to eye bolts fitted into sockets which were permanently fixed into the building (anchors).
- 1.2 Following an exercise to test these anchors in May 1999 by Hilti (Great Britain Limited) in which a high percentage of the sockets failed load tests and many of the sockets were unable to be tested due to corrosion or blockage, an alternative system of securing the ladders was sought by the Specialist Services Manager as a temporary solution until the defective sockets could be replaced.
- 1.3 In June 1999, a device called 'Micro Lite' was demonstrated by a representative from the manufacturer, Ladderfix Limited. This device consists of purpose built wheels fixed to the top of the ladder which, when resting against the wall with a person's body weight on the ladder, depress slightly and prevent both sideways movement and ground slips. This was considered to be a suitable means of securing ladders used by painters and was introduced into the Department.
- 1.4 The UCATT Steward was of the opinion that this securing device was not adequate and did not meet the Construction (Health, Safety and Welfare) Regulations 1996. After making representation to the Construction Services Health and Safety Committee he brought the matter to the J.C.C. The Committee agreed that the Head of Personnel Services would investigate the matter further and bring forward a report to the next meeting of the Committee.

**2. LEGAL REQUIREMENTS**

- 2.1 The Construction (Health, Safety and Welfare) Regulations 1996 apply and the following are extracts which are relevant to the use of ladders:

Regulation 6

- (1) Suitable and sufficient steps shall be taken to prevent so far as is reasonably practicable any person falling . . . . .

- (5) A ladder shall not be used as, or as a means of access to or egress from, a place of work unless it is reasonable to do so having regard to:
  - (a) the nature of the work being carried out and its duration; and
  - (b) the risks to the safety of any person arising from the use of the ladder.
- (6) Where a ladder is used pursuant to paragraph (5)
  - (a) it shall comply with the provisions of Schedule (5) . . . .

## 2.2 Schedule 5

### Requirements For Ladders

1. Any surface upon which a ladder rests shall be stable, level and firm, of sufficient strength and of suitable composition safely to support the ladder and any load intended to be placed on it.
2. A ladder shall –
  - (a) be suitable and of sufficient strength for the purpose or purposes for which it is being used;
  - (b) be so erected as to ensure that it does not become displaced; and
  - (c) where it is of a length when used of 3 metres or more, be secured to the extent that it is practicable to do so and where it is not practicable to secure the ladder a person shall be positioned at the foot of the ladder to prevent it slipping at all times when it is being used.
3. All ladders used as a means of access between places of work shall be sufficiently secured so as to prevent the ladder slipping or falling.
4. The top of any ladder used as a means of access to another level shall, unless a suitable alternative handhold is provided, extend to a sufficient height above the level to which it gives access so as to provide a safe handhold.
5. Where a ladder or run of ladders rises a vertical distance of 9 metres or more above its base, there shall, where practicable, be provided at suitable intervals sufficient safe landing areas or rest platforms.

Section 3 of Schedule 5 above requires the ladder to be “sufficiently secured” to prevent the ladder from slipping or falling. Use of the Microlite is considered to sufficiently secure the ladder in certain circumstances as detailed in Section 3.2 of this report.

## 3. DETAILS OF THE INVESTIGATION

Construction Services employees were interviewed (Trade Union and Management) and the following emerged:

### 3.1 Strap tie system using anchors

The existing system is in a state of disrepair and will require investment to repair or install anchors in all premises. Some degree of maintenance will be required. The investment could be programmed to coincide with major works on premises e.g. colour wash.

Hilti undertook a survey of anchors in May 1999 and noted the following faults which were found:

1. Various fixings were installed in mortar beds which is not in accordance with manufacturer's specification.
2. Anchor wedges (various) not correct embedment depth thus compromising pullout value.
3. Some anchors were installed too low for height of building – approximately 3 feet from base.
4. The setting tool used in application of anchor wedges may crush mortar.
5. Some anchors installed at an angle again compromising pullout value.
6. Due to use of mild steel anchors, many have been subject to corrosion making testing impossible.

3.1.1 A number of Councils have been contacted and, with the exception of Argyll and Bute, all have reduced the number of anchors in use for this purpose. This is due to costs of installation and maintenance.

### 3.2 Microlite system

3.2.1 Systems similar to the Microlite have been in use in the U.K. for over 20 years. The Health and Safety Executive in a letter accepted the view that a ladder fitted with such a device would satisfy the legal requirements providing the ladder is in good condition, suitable for industrial use, is fitted with non-slip feet and conforms to the "one in four rule" (one foot out from the structure for each four feet of ladder) when inclined against a structure. They also say that when the surface is not firm and does not provide purchase for non-slip feet e.g. on a slope, or on loose material, additional precautions will be required to prevent outward movement at the foot of the ladder.

3.2.2 There are a number of proprietary devices on the market for levelling ground and preventing outward movement. In addition, Construction Services management have instructed employees that in circumstances where outward movement is a possibility the ladder can be footed by a second employee.

3.2.3 The main difference between the microlite system and the strap-tie system would appear to be the greater possibility of outward movement at the base of the ladder and the decision to use devices or allow the ladder to be footed should overcome this. The UCATT representative is of the opinion that unless the ladder is footed the system is unsafe. UCATT members are the employees working off the ladder. This could be a question of confidence in the system which may be overcome by training and operational experience.

### 3.3 Instruction and Training

- 3.3.1 Prior to the microlite being introduced it was demonstrated to Painter Chargehands and shop stewards who were then to cascade the instructions for use and provide a practical demonstration to users via Toolbox talk No. 5 'Safe Use of Ladders'.
- 3.3.2 In September 1999 Revised Departmental Safety Instructions 'Safe Use of Ladders', Stepladders and Trestles' were issued. These contained the following instructions on securing a ladder.

### 3.4 Securing a Ladder

- 3.4.1 *"The foot of a ladder should be supported on a firm and level surface and should not rest either on loose material, or on other equipment to gain extra height. Attachments for levelling up the feet on sloping surfaces should be properly fixed and used. In no case should the bottom rung be placed so that the total weight is carried on the rung; only the stiles are designed for this purpose.*

*It must be ensured that the ladder cannot slip and wherever practicable the top should be securely fixed. Slip may be prevented by the use of a lashing, strap or proprietary clip secured to both stiles, or where suitable by equipment such as tie restraining straps or tensioned guys. Whilst lashings, etc. are being fixed the ladder should be footed.*

*Where securing at the top is impracticable, arrangements must be made to prevent the ladder from slipping outwards or sideways. Proprietary limpet connections can achieve this and methods of securing at the base include fixed blocks or cleats, sandbags or stakes embedded in the ground. Additionally, most ladders can be fixed at the foot with pads, caps, or sleeves.*

*On slippery floor surfaces special care is necessary to prevent the ladder foot from moving.*

*The head of the ladder should rest against a solid surface able to withstand the imposed loads. Where the surface may be fragile or brittle so that it cannot withstand such loads, equipment such as ladder stays should be used.*

*In circumstances where it is impracticable to fix the ladder at the top or at the foot, a second person should be stationed at the foot to prevent slipping; this precaution, however, is considered to be effective only for ladders not more than 6m in overall length. The person "footing" should face the ladder with a hand on each stile and with one foot resting on the bottom rung".*

- 3.4.2 These instructions are comprehensive but make reference to attachments for levelling, proprietary clips and items for securing the ladder at the base. The instructions will, therefore, only be adequate if these devices are readily available to the ladder users.
- 3.4.3 The objective of the Toolbox talk should be to reinforce these instructions and should not be seen as a substitute for adequate training of ladder users.

## 4. CONCLUSIONS AND RECOMMENDATIONS

- 4.1 The use of anchors and straps to tie the ladder is an excellent system for securing ladders but there is likely to be a substantial cost involved in replacing defective anchors, maintaining them and testing them annually.

- 4.2 The system introduced involving the microlite system will meet the requirements of the Construction Health Safety and Welfare Regulations 1996 but does rely more on human factors than the strap system as it relies on properly trained employees using attachments and making decisions based on general type and conditions on whether the ladder should be footed or levelling devices used to prevent the ladder slipping outwards at the base.
- 4.3 The toolbox talk given to the employees is not considered to be adequate training in the use of ladders with the microlite system. It is unlikely that in-house personnel at present will be able to competently train employees in the use of this system and an external provider should be sought for the initial training. It may be that in-house employee(s) could be trained to deliver this training in the future.
- 4.4 It is essential that necessary attachments for stabilising the ladders are readily available to those who may require to use them.

## 5. Recommendations

## Action

It is recommended that:

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| 5.1 | The actual cost of providing, maintaining and testing anchors at all appropriate Council buildings should be established and, if reasonably practicable, a programme of installation and maintenance be developed and implemented. | Housing and Property Services |
| 5.2 | All relevant employees be trained in the safe use of ladders and microlite system. (This should involve practical work and assessment of competence).  | Construction Services         |
| 5.3 | All necessary accessories for levelling and securing the base of the ladder are readily available to users at all times.   | Construction Services         |
| 5.5 | More detailed written guidance on the use of accessories and 'when the ladder can be footed' be provided.  | Construction Services         |

*Aris Wylie*

**Head of Personnel Services**