FILE NAME: Asbestos Cement Pipe and Sheet (ACPS)

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ASBESTOS IN BUILDING

For some months the University of Leeds Safety Committee and other committees have been considering the extent to which asbestos should continue to be used in buildings in the light of the increasing awareness of the dangers of this material to health.

The following facts have been extracted by Professor Preston, F.R.S., from modern scientific literature on the subject.

1. Inhalation of asbestos dust can cause lung cancer and other disorders of the lungs and stomach. Recognised cases of severe asbestosis are said by medical men to be confined to workers with asbestos; on the other hand, the delay between inhalation and the development of symptoms is usually long (of the order of 20 years) and the connection could be overlooked in cases where attention is not specifically drawn to it.

2. Once asbestos dust is inhaled into the lungs, the body has no way of removing it. Even a brief exposure is known to have caused cancer.

3. Asbestos dust in lung tissue may be either (i) coated with a fibrous sheath, forming the so-called asbestos body (ii) left uncoated. It is not known whether the fibrous sheath is protective or whether the fibrous bodies themselves cause the ailments: or indeed whether some other contaminant to asbestos (e.g. oil) is the culprit.

4. Asbestos dust ranges in size from particles visible only in the electron microscope to those visible in the light microscope. The evidence is that all particles cause asbestos bodies.

5. So called "safe limits" are being revised, for it is now generally accepted by informed authorities that there is no "safe limit". "Since cases of asbestosis and neoplasia associated with asbestos have been recorded following the minimal exposure of community environment"....(Dr. Schall of the U.S. occupational health programme.)

6. It seems that once asbestos dust has contaminated a room the room cannot be made safe again. The relevant observations are made by Dr. Holt (University of Reading) using guinea pigs (these are highly susceptible to asbestos); guinea pigs in a room exposed to asbestos dust, cleaned thoroughly and repainted still acquired asbestos bodies in their lungs. He concludes that minimum exposure is dangerous.

7. On exposure merely to community environment, Dr. Thomson (Department of Pathology, University of Cape Town) reports on 500 consecutive autopsies in each of Cape Town and Miami. He reports 30% of the cadavers had asbestos bodies in the lungs. He concludes his paper by remarks on the manifold uses of asbestos waste where alternatives are available and where asbestos is not essential. "Some of these, however, are unwise and potentially dangerous such as adding it to the bitumen used for tarring roads".

The dangers of this latter suggestion are referred to in an article in the Guardian of 12.11.66 which also contains the following passages:

> "The current issue of the medical journal "The Lancet" reports the death of a man of 48 from the coincident development of asbestosis and an associated form of cancer. His only exposure to asbestos dust had occurred thirty years ago when he worked for six months as a grinder in an asbestos factory."
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> "Fears expressed by dockers handling asbestos have been allayed by an assurance that malignancy cannot result unless exposure has been heavy enough to cause asbestosis. This is a dangerous assumption, no longer supported by informed medical opinion.
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> "It is all too obvious that the uncontrolled tipping of asbestos waste, like that which took place in Buxworth, in Derbyshire, presents a serious hazard which needs to be suppressed by all possible means including proper legislation. There is no longer any question of "safe" exposure to asbestos, but there is an urgent need of new rigorously controlled methods of handling and packaging."

It seems likely that there is already a danger on the roads from dust produced by the wearing of asbestos brake linings.

There are several common ways of using asbestos in modern buildings and the University of Leeds has decided:

(a) That the use of untreated asbestos and crocidolite in any form be banned in all new University buildings. (e.g. in the form of sprayed asbestos ceilings or insulation to heating pipes.)

(b) That asbestos cement should not be used for air inlet louvres (where dust abrasion would release fibres which would then be drawn into the building) nor for panels liable to be abraded or rubbed, or frequently removed for maintenance purposes.

(c) That where no suitable substitute could be found, and asbestos cement panels must be used, then the following precautions must be observed:

(i) That all asbestos cement panels used be cut to size, drilled and sealed on both sides and all edges before being introduced into the building.

(ii) That all burrs and loose fibres be removed from the edges of asbestos sheets prior to sealing.

(iii) That all fixing holes be positioned as far away from the corners of the sheets as possible to obviate breaking and cracking and be sealed and provided with a protective grommet.

(iv) That, in order to avoid damage to panels as they are fixed in position, screw holes in the frame be drilled with the aid of a template.

(v) That no cutting or drilling of asbestos panels be permitted on a building site except in a hut specifically provided for the purpose and fitted with equipment designed to collect the asbestos dust for subsequent safe disposal with provision for sealing.

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Such measures as these are costly, and a lot will depend (a) upon the extent to which asbestos cement manufacturers will be prepared to face the extra cost of sealing, and (b) upon the comparative costs of impregnating alternative materials such as hardboard against fire. Initial enquiries have given the following comparative costs:

Material	Finish	Thickness	Square foot	Insulation	Sq...f
Asbestos Cement	untreated	⅜"	3.7 lbs	28.5 dB	17 per
	Trotol emulsion glaze	⅜"	3.7 lbs	28.5 dB	26 per
Hardboard (top quality)	untreated	¼"	1.5 lbs	24 dB	7 per
	Pyrolith-impregnated to Class I standard (very low flame spread guaranteed for 25 years)	¼"	1.8 lbs	25 dB	12 per
Steel	untreated	14 swg	3.4 lbs	28 dB	23 per
	"	16 swg	2.7 lbs	27 dB	18 per
Steel	Galvanised	14 swg	3.4 lbs	28 dB	28 per
	"	16 swg	2.7 lbs	27 dB	22 per

Discussions at Leeds have aroused a good deal of controversy and the measures set out on the previous page seem elaborate in relation to the casual way in which raw asbestos is used in some departments. But it does seem that our present practices are dangerous, and a review of the whole situation throughout the University is taking place. The purpose of this note is to set out such facts as we have been able to collect in case they are of interest to others.

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