

•
•
•
•
•
•
•
•
•
•
•

Building Deconstruction & Salvaged Materials Reuse

SWANA Pacific Northwest Regional Solid Waste Symposium

Burnaby, B.C.

April 14, 2000

Presented by:

Thomas Mueller

Greater Vancouver Regional District

thomas.mueller@gvrd.bc.ca

• • • • • • • • • •



•
•
•

Demolition Waste Salvage & Recycling

- **604,296 tonnes of demolition waste generated in 1998**
- **1,430 demolition permits**
- **80% residential & 20% industrial/commercial projects**
- **materials were salvaged from approx. 50% of residential projects**
- **mainly non-structural materials were salvaged which make up less than 10% of the waste stream**
- **90% of materials were landfilled**

Salvage & Recycling cont'd

- **at commercial & industrial sites, the majority of concrete, asphalt, drywall and scrap metal were recycled**
- **material salvage and recycling of wood waste less developed**
- **142,000 tonnes of 'demolition' wood waste generated annually**
- **41,251 tonnes of wood waste were recycled in the GVRD in 1998**

•
•
•

Code of Practice for the Building Industry

- **recommended actions for the demolition sector:**
 - salvage re-usable materials from buildings during demolition and renovation
 - at demolition/renovation projects, separate concrete, asphalt, wood and scrap metal for recycling

•
•
•

Deconstruction/Demolition Planning Committee (D2PC)

- **multi-stakeholder committee with representation from public and private sector**
- **focus on incentives and education rather than regulation to develop a provincial Demolition Materials Diversion Strategy**

Committee Objectives cont'd

- **objectives:**
 - **explore deconstruction as a possible strategy for achieving both proper management of hazardous materials and maximum diversion**
 - **build understanding of how the hazardous components of buildings must be managed**
 - **build awareness of the economic value of many building components**
 - **identify barriers and opportunities for greatly increasing diversion through reuse and recycling**
 - **develop a provincial demolition material diversion strategy with involvement of all relevant sectors**

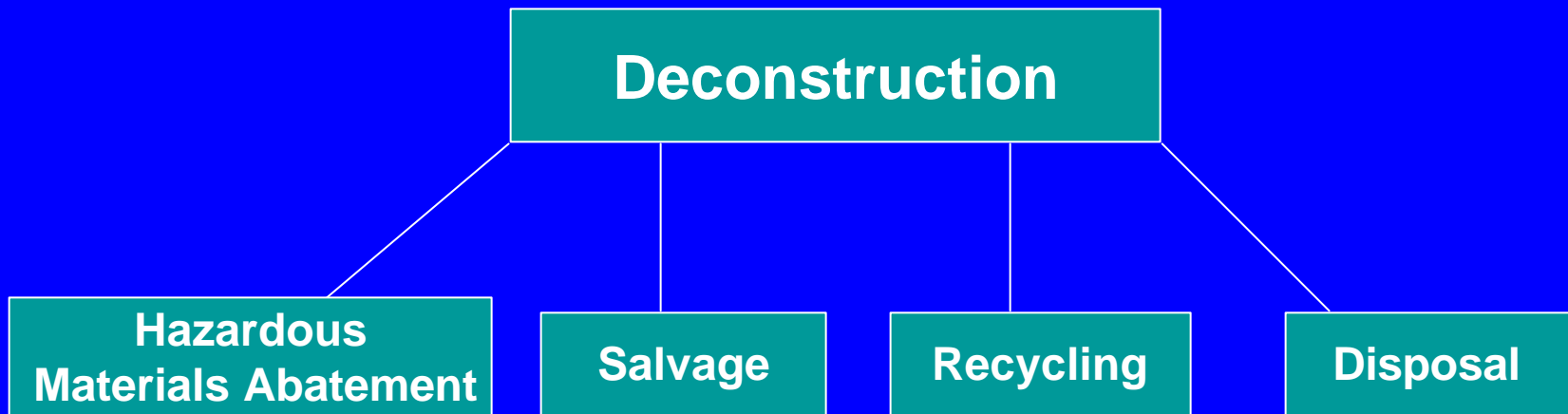
•
•
•

D2PC Members

- **Thomas Mueller, GVRD**
 - **Brian Grant, MELP**
 - **Corinne Fulton, Litchfield & Co Ltd.**
 - **Neil McCreedy, City of Vancouver**
 - **Denise Taschereau, RCBC**
 - **Rob Janus, CRD**
 - **Peter Clark, BCBC**
 - **Rob Mueller, HL Demolition**
 - **Wayne Rawluck, Pacific Blasting & Demolition**
 - **Paul Kernan, AIBC**
 - **Mark Rowlands, FVRD**
 - **Mike Quigley, WCB**
 - **Jeff Westeinde, Quantum Environmental**
 - **John Holland, APEG & PHH Environmental**
 - **Herman Rebneris -Home Builders Assoc-Victoria**
- • • • • • • • • •

-
-
-

Deconstruction Process



•
•
•

End-Uses for Deconstruction Materials

Re-Use

Salvaged Wood
timbers, dimensional lumber &
panel products

Concrete/Asphalt

Metals

Other
Salvaged Materials

Recycling

Wood

Concrete/Asphalt

Scrap Metal

Drywall

• • • • • • • • • •

Barriers to Deconstruction

- **lack of awareness of the potential economic, environmental and social benefits of deconstruction**
- **financial disincentives such as landfill tipping fees and municipal taxation policies**
- **existing regulatory frameworks which may not permit the reuse of salvaged materials in new construction**
- **municipal permitting policies and regulations that create incentives for speedy demolitions**

Barriers cont'd

- **inconsistent regulations governing the handling and management of hazardous materials combined with poor enforcement**
- **time required for deconstruction is not given adequate consideration**
- **cost and benefits of deconstruction are not well understood or accepted**
- **a lack of cultivated markets for salvaged materials**

Benefits of Deconstruction

- creates permanent jobs in the recycling, salvage & used building materials industry
- diverts significant quantities of demolition materials from disposal
- promotes proper removal, handling and disposal of hazardous materials
- produces high-quality building materials for new construction and renovation projects
- conserves natural resources

Current Initiatives

- **pre-demolition assessment and abatement of hazardous materials**
 - strengthen the enforcement of hazardous material regulations
 - City of Vancouver's mandatory Hazardous Materials Report Form
- **using salvaged building materials in new construction**
 - Design Guide: Salvaged Building Materials in New Construction
 - deliver professional development seminars in co-operation with Architectural Institute of B.C.

-
-
-

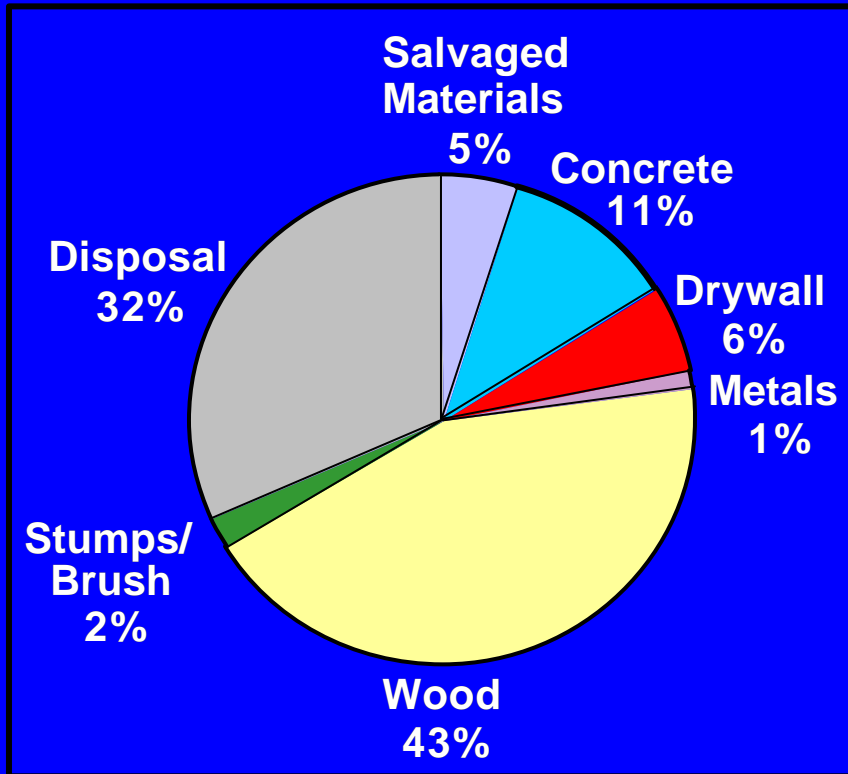
Initiatives cont'd

- **marketing of used building materials**
 - **research best approaches to marketing used building materials in B.C.**
 - **roundtable with used building material suppliers and architects in May**

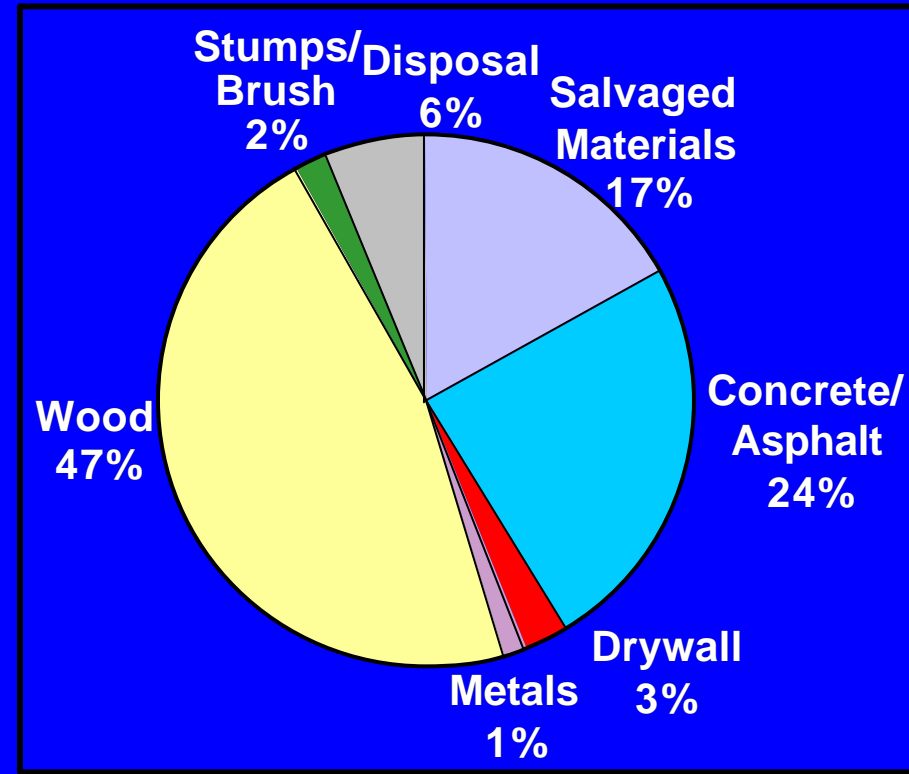
Next Steps

- **work with municipal building officials to create opportunities for deconstruction & promote reuse of salvaged building materials**
- **monitor mandatory hazardous materials report process and promote to B.C. municipalities**
- **develop marketing tools and strategies for used building materials in collaboration with other industry partners**
- **document ‘economics’ of deconstruction and materials reuse**
- **continue to promote deconstruction to developers and building owners**

**Apartment Building - West Vancouver
Materials Diverted (in percent by volume)**



**Pan-Hellenic House - UBC
Materials Diverted (in percent by volume)**



Pan-Hellenic House/UBC

Facility size: 8,895 sq.ft

Construction type: wood-frame

Summary Lumber Salvage

Lumber Dimensions	Length	Linear Feet
2"x6" t&g	6'-20'	8,265
3"x6" t&g	6'-18'	1,824
2"x"4		2,930
14.5"x5" glulam	48'	1,248
17"x8" glulam	56'	112
1"x4" cedar siding		1,158
1"x8" cedar siding		200
Total		26,937

PNE Showmart

Facility size: 45,000 sq.ft

Construction type: post & beam

Summary Lumber Salvage

Lumber Dimensions	Linear Feet
2"x4"	624
2"x6"	71,492
2"x8"	180
2"x10"	38,020
2"x12"	2,818
3"x10"	440
3"x16"	288
4"x12"	936
8"x8"	720
10"x10"	1,492
10"x16"	3,675
10"x20"	576
12"x10"	109
12"x12"	576
12"x21	192
14"x14"	84
Total	122,222