

BRIEFING NOTE: ADVANCING THE TECHNICAL STANDARD FOR THE R-2000 INITIATIVE

Introduction

One of the key and most valuable attributes of the R-2000 Initiative is the ongoing advancement of the R-2000 technical standard. This ensures that R-2000 houses are leading edge with respect to energy efficiency, resource efficiency, minimal environmental impact and healthy indoor environment. In anticipation of the renewal of the R-2000 Initiative, it is timely to set out an agenda for advancements.

Current Topics for Consideration for Advancing the R-2000 Technical Standard

New ideas for consideration arise on a continuing basis because of market developments and pressures, and technological advances. Those that currently appear to be promising are discussed below. Some ideas are still at the developmental stage in terms of requiring more research and development to improve their performance, reduce their cost and/or increase their availability.

- **Reducing energy consumption:** This can be achieved by making the R-2000 energy performance target more stringent. This approach achieves the goal of advancing the R-2000 technical standard and allows builders to use innovative techniques to achieve the new target. Examples of such techniques are improving insulation levels in the building envelope, increasing building airtightness, selecting higher performance windows, and/or choosing energy efficient space heating, space cooling and water heating systems. This could be done very quickly.
- **Improving indoor air quality:** With further development, technical advancements in assessing contaminants in indoor air and emissions from materials have the potential to offer more choices to builders for maintaining or improving the indoor air quality of R-2000 houses. This technology also creates the prospect of setting indoor air quality targets. These would constitute an advancement to the R-2000 technical standard. Some measures to improve indoor air quality can be implemented in the near term with respect to floor underlayments and duct sealants, and these could advance the R-2000 technical standard very quickly.
- **Improving resource efficiency:** The increasing range of products made of recycled materials provides more choice for builders to increase resource efficiency in R-2000 houses. Based on further research and development, targets can be established for the use of recycled products. In addition, targets can be developed for reducing material use and waste through design and optimum value engineering techniques. Targets can also be developed for waste management.
- **Reducing environmental impact:** Work would focus on two areas:
 - Water conservation through the use of grey water and landscaping that requires little water.
 - On-site energy generation: This refers to solar energy for heating, solar energy for generating electricity through photovoltaic equipment, wind energy for generating electricity and geothermal energy for heating.

With further research and development, targets can be set for reducing environmental impacts. For example, net zero or low net electrical energy consumption would reduce homeowners' operating costs. It would encourage utility companies to establish opportunities for homeowners to sell their excess electricity to the "grid". This would enable homeowners to lower their operating costs more and further reduce demand on utilities for electricity generation.