



# SMART GLASS

## Drawdown Technical Assessment References

Alibaba.com. (n.d.). High Quality 3mm 4mm 5mm 6mm 8mm 10mm 12mm 15mm 19mm Tempered Glass Price Per Square Meter - Buy Tempered Glass, Glass Price Per Square Meter,6mm Tempered Glass Price Product on Alibaba.com. Retrieved October 22, 2016 from [//www.alibaba.com/product-detail/High-Quality-3mm-4mm-5mm-6mm\\_60512655551.html](http://www.alibaba.com/product-detail/High-Quality-3mm-4mm-5mm-6mm_60512655551.html)

Amaral, A., Rodrigues, E., Gaspar, A., Gomes, A. (n.d.). *A Parametric Study on Window-to-Floor Ratio of Three Window Types Using Dynamic Simulation*. Retrieved October 22, 2016 from <https://arxiv.org/ftp/arxiv/papers/1503/1503.07016.pdf>.

Arici, M. Karabay, H., Kan, M. (2015). Flow and heat transfer in double, triple and quadruple pane windows. *Energy Build.* 86, 394–402, <http://dx.doi.org/10.1016/j.enbuild.2014.10.043>.

Arctic Glass Outlet. (n.d.). Retrieved October 22, 2016 from <https://kissourglass.com/>

Baetens, R., Jelle, B.P. & Gustavsen, A. (2010). Properties, requirements and possibilities of smart windows for dynamic day light and solar energy control in buildings: A state-of-the-art review. *Solar Energy Materials & Solar Cells*, 94, pp.87-105. doi:10.1016/j.solmat.2009.08.021

British Petroleum. (2014). *Statistical review of world energy 2014*. Retrieved from <http://www.bp.com/en/global/corporate/about-bp/energy-economics/statistical-review-of-world-energy.html>

BUILD. (n.d.). *Choosing the Right Window Size*. Retrieved October 12, 2016 from <http://www.build.com.au/choosing-right-window-size>.

CGH - Consolidated Glass Holdings. (n.d.). *Detention & Containment Glazing*. Retrieved October 12, 2016 from <http://security-glazing.com/security-glazing-products/detention-and-containment-glazing>

Christie Glass. (n.d.). *Prices*. Retrieved October 23, 2016 from <http://www.christieglass.com/priccalculator.php>

ClimateTechWiki. (n.d.). *High performance building façades*. Retrieved October 14, 2016 from <http://www.climatetechwiki.org/technology/high-performance-facades>.

Chow, T., Li, C.Y., & Lin, Z. (2010). Innovative solar windows for cooling-demand climate. *Sol Energy Mater Sol Cells*, 94:212–20.

Cuce, E., & Riffat, S.B. (2015). A state-of-the-art review on innovative glazing technologies. *Renewable and sustainable energy reviews*, 4, 695-714.

Cuce, E., Young, C.-H., Riffat, S.B. (2015). Thermal performance investigation of heat insulation solar glass: a comparative experimental study. *Energy Build*, 86, 595–600.

Department of Energy. (n.d.). *Energy-Efficient Windows*. Retrieved October 12, 2016 from <http://energy.gov/energysaver/energy-efficient-windows>.

Efficient Windows Collaborative. (n.d.). *Design guidance for new windows in a mixed climate*. Retrieved October 22, 2016 from <http://www.efficientwindows.org/downloads/MixedDesignGuide.pdf>

Energy.gov. (n.d.). *Tips: Windows, 2015*. Retrieved from <http://energy.gov/energysaver/articles/tips-windows>

Energy Information Administration. (2008). *Commercial Buildings Energy Consumption Survey (CBECS)*. Retrieved December 12, 2016 from [www.eia.gov/consumption/commercial](http://www.eia.gov/consumption/commercial)

Favoino, F., Overend, M., Jin, Q. (2015). The optimal thermo-optical properties and energy saving potential of adaptive glazing technologies. *Appl. Energy*, 156, 1–15.

Fazel, A., Izadi, A., & Azizi, M. (2016). Low-cost solar thermal based adaptive window: Combination of energy-saving and self-adjustment in buildings. *Solar Energy*, 133, 274-282.

Gao, Y. et al. (2012). Nanoceramic VO<sub>2</sub> thermochromic smart glass: A review on progress in solution processing. *Nano Energy* 1 (2), 221–246.

Glass for Europe. (n.d.). *The smart use of glass in sustainable buildings*. Retrieved October 22, 2016 from [http://www.glassforeurope.com/images/cont/165\\_90167\\_file.pdf](http://www.glassforeurope.com/images/cont/165_90167_file.pdf)

Global Industry Analysts, Inc. (2015). *Smart Glass Market Trends*. Retrieved October 22, 2016 from [http://www.strategy.com/MarketResearch/Smart\\_Glass\\_Intelligent\\_Glass\\_Market\\_Trends.asp](http://www.strategy.com/MarketResearch/Smart_Glass_Intelligent_Glass_Market_Trends.asp).

Gonzalez, F. (n.d.) *Smart windows and smart glass 2014–2024: Technologies, markets, forecasts*. Retrieved November 25, 2015 from <http://www.idtechex.com/research/reports/smart-windows-and-smart-glass-2014-2024-technologies-markets-forecasts-000373.asp>

Hakansson, A., Höjer, M., Howlett, R.J., & Jain, L.C., eds. (2013). Sustainability in Energy and Buildings. Vol. 22. *Smart Innovation, Systems and Technologies*. Berlin, Heidelberg: Springer Berlin Heidelberg.

International Energy Agency. (2016). *Energy Technology Perspectives 2016*, IEA/OECD, Paris, France.

International Energy Agency. (2013). *Transition to Sustainable Buildings: Strategies and Opportunities to 2050*. Table 1.4

Jelle, B.P., Hynd, A., Gustavsen, A., Arasteh, D., Goudey, H., Hart, R. (2012) Fenestration of today and tomorrow: a state-of-the-art review and future research opportunities. *Sol Energy Mater Sol Cells*, 96:1–28.

Laouadi, A., Galasiu, A.D., Swinton, M.C., Manning, M.M., March, R.G., Arsenault, C.D., et al. (2008). Field performance of exterior solar shadings for residential windows: winter results. In: *Proceedings of IBPSA-Canada eSim conference*, 20–22 May 2008, Quebec City, Canada.

Lampert, C.M. (1998). Smart switchable glazing for solar energy and daylight control. *Sol. Energy Mater. Sol. Cells*, 52 (3–4), 207–221.

Lampert, CM. (2003). Large-Area Smart Glass and Integrated Photovoltaics. *Solar Energy Materials and Solar Cells*, 76, no. 4, 489–499.

LEED. (n.d.). LEED Certification Toolkit and Forum. Accessed October 12, 2016.  
<http://www.leeduser.com/glossary/term/4936>.

Nielsen, T.R., Duer, K., Svendsen, S. (2000). Energy performance of glazing and windows. *Sol Energy*; 69:137–43.

O'Connor, J. (2004). *Survey on actual service lives for north american buildings*. Retrieved from [http://cwc.ca/wp-content/uploads/2013/12/DurabilityService\\_Life\\_E.pdf](http://cwc.ca/wp-content/uploads/2013/12/DurabilityService_Life_E.pdf)

Passivhaus Institute. (n.d.). *Home page*. Retrieved from <http://www.passiv.de/en/index.php>

Pidcock, C. (2014, July 22). Window ratio to floor area advice. *Sanctuary Magazine*. Retrieved from <http://www.sanctuarymagazine.org.au/ideas-advice/ask-our-experts/window-ratio-to-floor-area-advice/>.

Pietrzko, S., Mao, Q. (2013). Vibration identification and sound insulation of triple glazing. *Noise Control Eng. J.*, 61, 345–354. <http://dx.doi.org/10.3397/1/3761029>.

Posset, U., Marsch, M., Rougier, A., Herbig, B., Schottner, G. & SEXTL, G. (2012), Environmental assessment of electrically controlled variable light transmittance devices. *RSC Advances* 2, pp.5990-5996. DOI: 10.1039/c2ra20148h

Rayno Window Film. (n.d.) *Smart window film - switchable transparent to opaque*. Retrieved October 22, 2016 from <http://www.raynofilm.com/smartfilm>.

Rezaei, S.D., Shannigrahi, S. & Ramakrishna, S. A review of conventional, advanced, and smart glazing technologies and materials for improving indoor environment. *Solar Energy Materials and Solar Cells*, 159, 26-51.

Schlömer S., Bruckner, T., Fulton, L., Hertwich, E., McKinnon, A., Perczyk, D., Roy, J., Schaeffer, R., Sims, R., Smith, P., & Wiser, R. (2014). Annex III: Technology-specific cost and performance parameters. In: *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Edenhofer, O., R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Savolainen, S. Schlömer, C. von Stechow, T. Zwickel and J.C. Minx (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

Smart Tint. (n.d.). *Smart tint switchable privacy film smart tint, inc. - smart film*. Retrieved October 28, 2016. <http://shop.smarttint.com/>

Taljaard, G. (2012, April 24). *Window-to-Floor Area Ratio Calculation in 4 Easy Steps (SANS 10400-XA 4.4.4.1 & 2)*. *Gideon's Desk*. Retrieved from <https://gtaljaard.wordpress.com/2012/04/24/window-to-floor-area-ratio-calculation-in-4-easy-steps-sans-10400-xa-4-4-4-1-2/>

Tahmasebi, M., Banihashemi, S., Hassanabadi, M. (2011). Assessment of the Variation Impacts of Window on Energy Consumption and Carbon Footprint. *Procedia Engineering*, 21, 820–828. 2011 *International Conference on Green Buildings and Sustainable Cities*.

Taylor, T. A. (2010). *Guide to LEED 2009 Estimating and Preconstruction Strategies*. John Wiley & Sons.

Thalfeldt, M., Pikas, E., Kurnitski, J., Voll, H. (2013). Façade design principles for nearly zero energy buildings in a cold climate, *Energy Build.* 67, 309–321. <http://dx.doi.org/10.1016/j.enbuild.2013.08.027>.

The British Fenestration Rating Council (BFRC). (n.d.). *The future of energy efficient windows*. Retrieved from <http://www.bfrc.org/>

TERI. (2014). *Regional report on the transition to efficient lighting in south asia*. Retrieved from <http://www.enlighten-initiative.org/Portals/0/documents/country-support/Regional%20Report%20on%20the%20Transition%20to%20Efficient%20Lighting%20in%20South%20Asia.pdf>

Tweney, D. (2013, August 19). Heliotrope to commercialize light- and heat-blocking 'smart glass'. *Venture Beat*. Retrieved from <http://venturebeat.com/2013/08/19/heliotrope-smart-glass/>

View, Inc. (n.d.). *View Dynamic Glass by View*. Retrieved September 9, 2014 from <http://viewglass.com/>

View, Inc. (n.d.) "Energy Dynamics of View Dynamic Glass in Workplaces" Retrieved from October 28, 2016. <http://viewglass.com/assets/pdfs/workplace-white-paper.pdf>.

Verre sur Mesures. (n.d.). *Verre Feuilleté. Verres Sur Mesures - Verre Trempé et Feuilleté Sur Commande*. Retrieved October 22, 2016 from <http://verresurmesures.com/index.php/fr/boutique-verre-sur-mesures-produits-et-tarifs-verre-sur-mesure-ferrure-inox/prix-verre-feuille-de-securite-floatglass>.

Wang, K., Wu, H., Meng, Y., Zhang, Y., & Wei, Z. (2012). Integrated energy storage and electrochromic function in one flexible device: an energy storage smart window. *Energy & Environmental Science* 5, no. 8, 8384. doi:10.1039/c2ee21643d.

Wang, S.Z., Guan, M. (2005). Windows—the key of building energy efficiency. *Constr. Glas. Glas. Ind.* 4, 3–8.

Window & Door. (n.d.). *International code requirements for windows & doors*. Retrieved October 12, 2016 from <http://windowanddoor.com/article/codes-standards/international-code-requirements-windows-doors>

World Green Buildings Council. (2016). *WorldGBC launches groundbreaking project to ensure all buildings are “net zero” by 2050*. Retrieved from <http://www.worldgbc.org/activities/news/global-news/worldgbc-launches-groundbreaking-project-ensure-all-buildings-are-net-zero-2050/>

Yoshimura, K., Tajima, K. and Yamada, Y. (2014). *Development of switchable mirror glass*. Retrieved from [http://www.aist.go.jp/pdf/aist\\_e/synthesiology\\_e/vol5\\_no4/vol05\\_04\\_p262\\_p269.pdf](http://www.aist.go.jp/pdf/aist_e/synthesiology_e/vol5_no4/vol05_04_p262_p269.pdf).