Abstract: A class of modules is called deconstructible if it coincides with the class of all $\mathcal{S}$-filtered modules for some set of modules $\mathcal{S}$. Such classes provide a convenient setting for construction of approximations. We prove that for any deconstructible class $\mathcal{C}$ the class of all modules possessing a $\mathcal{C}$-resolution is deconstructible and the same holds for the classes of modules with bounded $\mathcal{C}$-resolution dimension. Furthermore, we study the locally $\mathcal{F}$-free modules; a sufficient condition on the class $\mathcal{F}$ is given for the class of all locally $\mathcal{F}$-free modules to be closed under transfinite extensions. This enables us to show that there are many non-trivial examples of non-deconstructible classes, generalizing the recent result of D. Herbera and J. Trlifaj concerning the non-deconstructibility of the class of all flat Mittag-Leffler modules over a non-right perfect ring.